ABSTRACT

WEEDFALL, ANDREW ALEXANDER. Individual Differences in Perceptions of Cyber Incivility: Mitigating the Negative Effects of Incivility with Job Crafting. (Under the direction of Dr. Samuel B. Pond, III).

Incivility is a set of mild, but deviant behaviors that violate workplace norms for mutual respect and that have an ambiguous intent to harm. Researchers have begun to link incivility to a wide array of negative work outcomes. However, less is known about the antecedents and outcomes of cyber incivility, or incivility that occurs through electronic mediums, such as email or text messaging. The present study aimed to fill some of the gaps in the cyber incivility literature by assessing personality as an antecedent to perceptions of cyber incivility (PCI), and four types of counterproductive work behaviors (CWBs) as outcomes. Furthermore, the present study assessed the mitigating factor of job crafting behaviors on the relation between PCI and these CWBs. Measurement issues prohibited the assessment of the relation between personality and PCI; however, other results showed a strong positive, and statistically significant relation between PCI and all four categories of CWBs. Furthermore, results yielded several significant interactions between the four job crafting dimensions and PCI on the CWB outcomes. However, interaction plots revealed that most interactions were in a direction opposite from what was hypothesized. I discuss the interpretation of these findings, limitations of this research, and suggestions for future research in detail.
Individual Differences in Perceptions of Cyber Incivility: Mitigating the Negative Effects of Incivility with Job Crafting

by
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Individual Differences in Perceptions of Cyber Incivility: Mitigating the Negative Effects of Incivility with Job Crafting

Employees have reported frequent experiences of uncivil behaviors in their workplaces (Pearson & Porath, 2005; Porath & Pearson, 2013), and researchers have linked these experiences to a wide array of negative outcomes (Schilpzand, De Pater, & Erez, 2016). Researchers refer to these behaviors as acts of workplace incivility and describe incivility as a set of deviant behaviors that violate workplace norms for mutual respect but are low in intensity and have an ambiguous intent to harm the target of these behaviors (Andersson & Pearson, 1999). Examples of incivility include, speaking to others disrespectfully or in a demeaning manner, ignoring others, interrupting others during conversation, excluding co-workers from meetings or from going out to lunch, and other forms of discourteous behavior (Pearson, Andersson, & Porath, 2000; Penney & Spector, 2005).

Due to the low intensity and ambiguous intent to harm of incivility, instigators of workplace incivility can rightfully claim that a potentially uncivil behavior was not done with ill intent, or that targets misinterpreted the behavior (Kunkel & Davidson, 2014). As a result, when assessing incivility, the focus is often not on the potentially uncivil behaviors of the perpetrators, but instead on the victims and whether they perceive the behaviors as uncivil (Lim & Chin, 2006; Penney & Spector, 2005). In other words, it is possible for one individual to perceive an interaction as uncivil while another individual does not. These differences in perceptions suggests that there may be individual differences that explain why certain individuals perceive these ambiguous scenarios as uncivil while other individuals do not (Sliter, Withrow, & Jex, 2014).
Incivility perceptions are important because researchers have identified a number of negative outcomes associated with experiencing uncivil behaviors (see Schilpzand, De Pater, & Erez, 2016 for a review). Furthermore, forms of incivility such as cyber incivility have become increasingly prevalent in the workplace (Giumetti, Saunders, Brunette, DiFrancesco, & Graham, 2016), yet they have received less attention in some areas of the literature. Thus, this study assesses the potential individual differences that could influence perceptions of cyber incivility (PCI) and the negative outcomes associated with them that researchers have not yet addressed. Lastly, the present research examines factors that may influence or potentially mitigate the negative outcomes associated with PCI. Specifically, this study investigates the mediating role of PCI between personality and counterproductive work behaviors (CWBs) and the moderating effects that the source of the incivility and job crafting have on the relation between PCI and CWBs.

**Incivility and Cyber Incivility**

In recent incivility literature, cyber incivility, or incivility that occurs through electronic communication such as email and text messaging has gained researcher interest. Cyber incivility shares many of the same characteristics as face-to-face incivility in that it is a violation of workplace norms of mutual respect and has an ambiguous intent to cause harm (Lim & Teo, 2009). However, this rude and discourteous electronic communication lacks some important qualities that face-to-face interactions have. Notably, instant feedback and nonverbal cues are not available through email and text communications. As a result, individuals may be more likely to perceive incivility through these means of communication because the intentions of harm may be even more ambiguous in these exchanges compared to face-to-face interactions (Giumetti et al., 2016). In contrast, due to the heightened ambiguity of intent to harm, targets
may experience fewer negative outcomes as a result, because they are able to find alternative explanations for the uncivil behavior (Miner et al., 2018). Nonetheless, researchers posit that instigators may engage in more uncivil behaviors through online communication because they feel less constrained and freer to express themselves in ways that they may refrain from during face-to-face interactions (Giumetti et al., 2016).

Uncivil behaviors may look similar to one another regardless of whether they occur online or through face-to-face communication. However, if individuals are more likely to engage in uncivil behaviors or perceive interactions as uncivil when they occur through electronic communication systems compared to in person, it is important to understand the antecedents and outcomes of such cyber interactions.

By and large, it should be no surprise that these low-intensity and thus, easily deniable acts of incivility occur often within the workplace. Researchers contend that as many as 98% of workers have experienced face-to-face incivility in the workplace at least once, while 20%-50% of them have experienced these behaviors at least once per week (Pearson & Porath, 2005; Porath & Pearson, 2013). Few research studies exist on the frequency of cyber incivility experiences among employees, but one study has shown that 91% of employees included in the study had experienced cyber incivility from their supervisor at work (Lim & Chin, 2006).

Although both forms of incivility tend to occur frequently in the workplace, the frequency with which people experience face-to-face or cyber incivility may vary from person to person. In other words, there may be individual differences in the way people perceive and draw conclusions about certain scenarios (Sliter et al., 2014). For instance, one individual may feel ignored by a colleague who has not yet responded to an email (i.e., cyber incivility), while, in contrast, another individual may simply assume that the colleague has not yet seen the email or is
busy dealing with some more pressing concern. Researchers have aimed to identify individual differences that might help to determine who is most likely to experience incivility. Among those most commonly researched, are personality differences.

**Personality and Incivility**

Researchers often describe personality through the five-factor model of personality, otherwise known as The Big Five. This framework summarizes personality into five distinct factors, or personality traits: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (McCrae & John, 1992). Openness to experience involves being open minded, intelligent, imaginative, and curious. Conscientiousness is associated with being dependable, achievement oriented, careful, organized, and responsible. Individuals who are high in extraversion tend to be talkative, social, and are often ambitious. Agreeableness refers to being friendly, flexible, courteous, and tolerant or compliant. Finally, neuroticism, or emotional instability, relates to being emotional, anxious and depressed, and is associated with general negative affectivity (Barrick & Mount, 1991; Costa & McCrae, 1990). Researchers have posited that these Big Five personality traits may influence the extent to which individuals perceive certain behaviors of others as uncivil.

Milam, Spitzmueller, and Penney (2009) were among the first to assess how incivility was associated with personality. Specifically, they examined how agreeableness, neuroticism, and extraversion link to perceptions of incivility. They found that individuals who were low in agreeableness or high in neuroticism were more likely to report that they had experienced incivility in the workplace. Other researchers have also found that all Big Five traits except extraversion were correlated with experiences of incivility (Sliter et al., 2014; Taylor & Kluemper, 2012) and that individuals high in neuroticism were more likely to rate the severity of
uncivil incidents higher on average than individuals who were low in neuroticism (Beattie & Griffin, 2014). Sliter et al., (2014) contended that these personality traits influenced perceptions of incivility in the same way that personality affects the appraisal process of stress.

According to the transactional theory of stress (Lazarus & Folkman, 1987), when people experience potentially stressful demands, they undergo two types of appraisals regarding what that stressor means to them personally, namely, primary and secondary appraisal. Primary appraisal involves assessing what kind of a demand one is experiencing. Specifically, demands can be a threat in which one may anticipate future potential harm or a challenge in which one may anticipate that the experience may provide potential for mastery. For example, during potentially uncivil interpersonal interactions, it is through the primary appraisal process that individuals perceive whether the interaction is a threatening stressor (e.g., incivility) or a challenge (e.g., relationship building opportunity). In contrast, secondary appraisal is the cognitive process that involves evaluating what a person might do about the stressor. This appraisal involves assessing the resources that are available to cope with and improve the situation (Lazarus & Folkman, 1987; Sliter et al., 2014). Therefore, primary appraisal is relevant to the perceptions and antecedents of incivility, whereas secondary appraisal is relevant to the resulting outcomes of incivility once an individual has perceived the occurrence of incivility. Research from the personality, stress, and CWB literatures suggest that personality may be a driver in both of these appraisals.

**Linking Personality, with Perceptions and Outcomes of Cyber Incivility**

Because individuals’ dispositions affect the way that they appraise their stressors, these dispositions can influence the extent to which individuals perceive incivility and thus, the
subsequent outcomes of incivility. However, research has shown that some personality traits are more influential in this process than others are.

**Neuroticism.** Neuroticism is among the most consistent personality predictor of stress appraisal and incivility perceptions. Costa and McCrae (1990) refer to neuroticism as a predisposition to experience distress, which influences how individuals perceive potential stressors that they experience. Several stress researchers have found positive associations between highly neurotic individuals and stress levels or stress appraisal (e.g., Ebstrup, Eplov, Pisinger, & Jørgensen, 2011; Gallagher, 1990; Kaiseler, Polman, & Nicholls 2012; Penley & Tomaka, 2002; Vollrath, 2000). This predisposition to stress may be especially true for interpersonal stressors (e.g., incivility). Gunthert, Cohen, and Armeli (1999) showed that in a daily diary study, individuals who scored high on neuroticism tended to more frequently rate interpersonal stressors as their worst problem of the day than individuals low in neuroticism. Because highly neurotic individuals tend to be especially sensitive to interpersonal stressors, it is unsurprising that they would frequently perceive incivility or cyber incivility in ambiguous interactions. Although all forms of incivility have an ambiguous intent to harm, the lack of nonverbal cues and feedback in cyber incivility may even intensify the ambiguity of intention to harm (Giumetti et al., 2016). Therefore, in the present research, I expect that individuals high in neuroticism will more frequently perceive and interpret these ambiguous cyber behaviors as uncivil compared to individuals low in neuroticism.

**Conscientiousness.** After neuroticism, conscientiousness is perhaps the next Big Five trait that is most consistently associated with stress and incivility. However, the direction in which it relates to these stress related variables is relatively inconsistent. For example, some researchers have suggested that, compared to individuals who are low in conscientiousness, those
who are high in conscientiousness tend to experience fewer interpersonal stressors over their lives because they are able to develop better relationships and engage in fewer altercations (Hogan & Ones, 1997). Accordingly, studies have shown that conscientiousness was negatively associated with perceived stress appraisal (e.g., Ebstrup et al., 2011; Penley & Tomaka, 2002; Watson & Hubbard, 1996). In contrast, Gartland, O’Connor, and Lawton (2012) found that individuals high in conscientiousness tended to appraise more stress than individuals low in conscientiousness. Similar inconsistencies exist within the incivility literature as well. Sliter and colleagues (2014) found evidence to support their assertion that conscientious individuals would be more sensitive to breaches of interpersonal norms due to their high attention to detail compared to individuals who were more easy-going and less organized. Yet, Taylor and Kluemper (2012) found a negative correlation between conscientious individuals and their perceptions of incivility. Nonetheless, there appears to be more evidence that suggests conscientious individuals are motivated to build strong relationships, avoid altercations, and have positive affective expectations for the situations that they encounter (Besser & Shackelford, 2007; Hogan & Ones, 1997). Thus, in the present study I expect that highly conscientious individuals will perceive less cyber incivility than individuals who are low in conscientiousness.

**Agreeableness.** Researchers have posited that individual differences in agreeableness may be the most salient Big Five trait with regard to interpersonal relationships, and specifically during interpersonal conflict. In these cases, individuals who are high in agreeableness may have a propensity to perceive potential interpersonal conflict more constructively than individuals who are low in agreeableness because agreeable individuals have a desire to sustain positive relationships with others. These researchers found empirical support for their claim (Graziano, Jensen-Campbell, & Hair, 1996), and research in the stress literature has also shown that highly
agreeable individuals appraise their stressors as less intense than individuals who are low in agreeableness (Kaiseler et al., 2012). However, other research has reported that there is no significant association between agreeableness and stress appraisal (e.g., Penley & Tomaka, 2002; Vollrath, 2000). Nonetheless, it seems that unlike conscientiousness, when researchers find significant associations between agreeableness and stress appraisal, they are always in a negative direction. Furthermore, both Milam et al., (2009) and Sliter et al., (2014) found that individuals high in agreeableness perceived less incivility than individuals low in agreeableness. With this in mind, as Graziano et al., (1996) suggested, individual differences in the agreeableness trait may be most important in contexts of interpersonal stressors as opposed to other stressors. Thus, in line with previous incivility research, in the present study I expect that individuals who are high in agreeableness will perceive less cyber incivility than individuals who are low in agreeableness. In fact, with the potentially higher ambiguity of cyber interactions compared to face-to-face interactions (Giumetti et al., 2016), highly agreeable individuals may have even less reason to perceive such cyber interactions negatively as they might in instances of potential face-to-face incivility.

**Openness to Experience.** By definition, individuals who are high in openness tend to be more open minded than those who are low in openness (Barrick & Mount, 1991). Thus, these individuals may be more likely or willing to give potential incivility perpetrators the benefit of the doubt (Sliter et al., 2014). Stress appraisal research has shown that individuals who are highly open to experiences appraise and experience fewer threatening stressors compared to their low openness counterparts (Penley & Tomaka, 2002; Schneider, Rench, Lyons, & Riffle, 2012). However, other researchers have shown that there is no relation between the openness trait and intensity of stress (Kaiseler et al., 2012) or frequency of interpersonal stressors (Vollrath, 2000).
The one study that has assessed how openness to experience relates to perceptions of incivility found that individuals who score high in openness tend to perceive fewer uncivil interactions than individuals who score low in openness (Sliter et al., 2014). However, the literature tends to offer less support to this association less than it does for associations involving the three aforementioned personality traits. Thus, I will not make any predictions with regard to openness to experience but will include it in the study for exploratory purposes.

**Extraversion.** In contrast to neuroticism, the extraversion trait is perhaps the least consistent predictor of threatening stressor appraisal or perceptions of incivility among the Big Five personality traits. Although some research has concluded that extraverts perceive and experience fewer stressors than introverts do (Penley & Tomaka, 2002; Vollrath, 2000), other research has shown no relation between stress and the personality trait (Kaiseler et al., 2012; Schneider et al., 2012). In line with the claim that extraverted individuals have more positive experiences than introverted individuals do, incivility researchers hypothesized that extraversion would be negatively associated with perceptions of incivility. Specifically, these researchers reasoned that extraverted individuals tend to view even neutral events in a positive light. Therefore, researchers expected that when extraverted individuals experienced potentially uncivil encounters, these individuals would be less sensitive to breaches in interpersonal norms and thus, perceive fewer experiences as uncivil. However, contrary to their hypotheses, these researchers found no relation between extraversion and perceptions of incivility (Milam et al., 2009; Sliter et al., 2014). Nonetheless, because uncivil interactions that occur electronically are potentially more ambiguous than uncivil face-to-face interactions, it is possible that the relationship between extraversion and incivility will be more salient with cyber incivility than face-to-face incivility.
Therefore, like openness, extraversion is still of interest to the present study and thus, is included for exploratory purposes.

**Outcomes of Incivility**

Given that certain personality traits may influence the appraisal process and thus perceptions of incivility, these traits may also have an indirect association with several negative outcomes. This is because, despite the mild nature of uncivil behaviors, research has shown that through high frequencies of occurrence, both face-to-face and cyber incivility are associated with a wide range of negative outcomes. These outcomes can impact both the personal well-being of individual employees as well as the organizations in which they work. For instance, researchers have concluded that the frequency of encounters with face-to-face workplace incivility is positively associated with psychological distress and negatively associated with organizational commitment and job satisfaction (Cortina, Magley, Williams, & Langhout, 2001; Spence Laschinger, Leiter, Day & Gilin, 2009; Taylor, Bedeian, & Kluemper, 2012). Additionally, qualitative research has shown that being a target of face-to-face incivility often results in experiencing feelings of negative affectivity and isolation after the encounter (Pearson, Andersson, & Wegner, 2001). Similarly, cyber incivility researchers have found that uncivil cyber behaviors link to some of the same negative outcomes as face-to-face incivility with regard to personal well-being. For example, researchers have found that cyber incivility is negatively associated with organizational commitment and job satisfaction, and positively associated with burnout and affective and physical distress (Giumetti, McKibben, Hatfield, Schroeder, & Kowalski, 2012; Giumetti et al., 2016, Lim & Teo, 2009; Park, Fritz, & Jex, 2015).

Furthermore, Giumetti et al., (2013) showed participants who experienced uncivil comments via
email tended to experience more negative affect than participants who received supportive email communications.

Studies have shown that face-to-face and cyber incivility can have some severe consequences on organizational outputs as well. Research has shown that uncivil face-to-face encounters at work are positively associated with turnover intentions, and negatively associated with citizenship performance and work engagement which then negatively affects task performance (Chen et al., 2013; Cortina et al., 2001; Spence Laschinger et al., 2009; Pearson et al., 2001; Taylor et al., 2012). Likewise, cyber incivility has shown negative and positive relations with job performance and turnover intentions, respectively (Giumetti et al., 2012; Giumetti et al., 2016). Thus, there are many similarities with regard to the negative outcomes of face-to-face and cyber incivility. However, one area of research that seems to be lacking in the cyber incivility literature, which may be especially relevant to personality, is the connection between cyber incivility and other CWBs.

The relation between cyber incivility and CWBs is especially of interest because research has shown a link between face-to-face incivility in the workplace and other CWBs (Mao, Chang, Johnson, & Sun, 2017; Penney & Spector, 2005). Specifically, incivility researchers have proposed that there may be a spiraling effect where acts of incivility are likely to lead to reciprocated acts of incivility and spiral into more severe forms of CWBs, including aggression (Andersson & Pearson, 1999). To date, there are only a few studies that empirically support this spiraling effect (e.g., Bunk & Magley, 2013; Kim & Shapiro, 2008); but overall, there is little extant research on any behavioral responses to incivility (Miner et al., 2018). To fill this gap in the incivility literature on the association between cyber incivility and CWB, the present study draws from the broader stress literature.
Two frameworks can explain the stressor to CWB relation. First, according to the job stress/emotion/CWB model, individuals may respond emotionally to the stressor by engaging in CWBs as a form of coping with the stressor (Fox, Spector, & Miles, 2001; Krischer, Penney, & Hunter, 2010; Spector & Fox, 2002). Alternatively, albeit not necessarily a mutually exclusive response to all stressors, individuals may have a more cognitive rather than an emotional response to a particular stressor. Martinko, Gundlach, and Douglas (2002) explain that individuals may cognitively rationalize their engagement in CWBs because of a stressor they have experienced. With regard to cyber incivility, both of these frameworks or driving forces could apply. For example, targets of cyber incivility may withdraw from their work or engage in production deviance in order to free up resources to cope with the stressor. Likewise, cyber incivility targets may rationalize abusive or even aggressive behaviors toward instigators as a way of getting back at them. Nonetheless, apart from withdrawal behaviors (see Giumetti et al., 2012), there is little to no existing research that has assessed the association between cyber incivility and CWBs. However, there is research on the association between personality and CWBs.

Researchers have proposed that personality may have direct and indirect effects on various CWBs (Cullen & Sackett, 2003). Typically, researchers have separately assessed how the Big Five personality traits are associated with CWBs directed at other people (CWB-P) and CWBs directed at the organization (CWB-O) in which the perpetrator works. For example, Kozako, Safin, & Rahim, (2013) found that agreeableness had a negative association with both forms of CWB while neuroticism and openness to experience had a positive association with both forms of CWBs. Interestingly, in contrast to their hypothesis, conscientiousness was not significantly related to either form of CWB in their study. However, other research has found
significant associations between conscientiousness and CWB-P, along with other associations between the Big Five personality traits and CWBs that are similar to the Kozako et al.’s findings (e.g., Bolton, Becker, & Barber, 2010; Mount, Ilies, & Johnson 2006). Meta-analytic research has attempted to summarize the relations between personality and CWBs. This research found that Big Five personality traits are among the most strongly correlated variables to both CWB-P and CWB-O. Specifically, Berry, Ones, and Sackett (2007) found especially strong relationships between CWB and agreeableness, conscientiousness, and neuroticism compared to openness and extraversion. The weaker associations found for openness and extraversion further support the inclusion of these traits for exploratory purposes only.

Thus, although some variation exists in the research, in general, there appears to be a clear relation between some personality traits and CWBs, namely agreeableness, conscientiousness, and neuroticism. Nonetheless, as Cullen and Sackett (2003) contend, although personality may have direct associations with CWBs in some cases, a more likely explanation is that personality may have an indirect effect on CWBs through attitudes, emotions, or perceptions of events. For example, personality may influence work aspects such as job satisfaction, which in turn influences the extent to which individuals engage in CWBs (Mount et al., 2006). The present research aims to address these associations through the assessment of possible indirect effects that personality has on the engagement in various types of CWBs through PCI from others. Specifically, this research assesses the engagement in incivility and cyber incivility as separate forms of CWB to distinctively understand how PCI relates to the engagement in cyber incivility (ECI) and face-to-face incivility, separate from other forms of CWBs. Moreover, this research also distinguished between CWB-Os and CWB-Ps. The CWB-Os include behaviors often classified as sabotage, withdrawal, production deviance, and theft. In
contrast, CWB-Ps typically refer to interpersonal conflicts that can range from severe physical aggression or threats of aggression to more minor infractions like incivility. I anticipate that neuroticism will have a positive indirect effect on the engagement in all of these CWBs, whereas agreeableness and conscientiousness will have a negative indirect effect on these various CWBs. Figure 1 fully illustrates the hypothesized associations and research questions.

_Hypothesis 1:_ PCI will mediate the association between personality (i.e., agreeableness, conscientiousness, and neuroticism) and the engagement in CWBs.

_Research Question 1:_ Will PCI mediate the association between openness to experience and the engagement in CWBs?

_Research Question 2:_ Will PCI mediate the association between extraversion and the engagement in CWBs?

It is important to assess the engagement in CWBs in separate categories (i.e., CWB-O, CWB-P, incivility, and cyber incivility) for several reasons more fully presented below.

**Cyber Incivility Source**

Researchers have found that certain antecedents may relate to some types of CWBs differently than others. Perhaps the most relevant to the present study are the findings from Fox et al., (2001). These researchers found that organizational stressors such as job constraints and injustice had stronger associations with CWB-O than with CWB-P. In contrast, they found that interpersonal conflict had a stronger association with CWB-P than CWB-O. In the context of cyber incivility, it would seem that cyber incivility, a form of interpersonal conflict, would be more associated with CWB-P than with CWB-O. However, it is also important to make note of who the _source_ of the cyber incivility is.
Although targets may perceive the uncivil cyber behaviors of a peer as forms of interpersonal conflict, targets may view uncivil cyber behaviors coming from their supervisors as forms of interactional injustice (Cortina et al., 2001; Penney & Spector, 2005). This is because individuals may perceive their supervisors as agents of the organization, and they may view exchanges with their supervisors as formal organizational interactions. Thus, in these scenarios, the targets of cyber incivility may be more likely to engage in CWB-O than in CWB-P because they feel that the uncivil behavior is essentially coming from the organization rather than an individual.

Additionally, in instances where supervisors are the instigators, power differentials can affect the type of CWBs that their targets engage in. Despite the fact that incivility targets may have more negative perceptions of uncivil behaviors that come from supervisors (Cortina & Magley, 2009), some research has shown that these targets are less likely to directly confront their uncivil supervisors compared to targets who experienced uncivil behaviors from less powerful instigators (Porath, Overbeak, & Pearson, 2008). These findings are also consistent with the literature on workplace revenge and retaliation. For example, Aquino, Trip, and Bies (2001) found that although being a victim of a workplace offense was positively associated with exacting revenge on the perpetrator, the relative status of the victim compared to the perpetrator moderated this relationship. In other words, victims were less likely to seek revenge against perpetrators when the perpetrators were of higher relative status within the organization than the victims themselves were. This is likely because there are greater risks involved with retaliating against a supervisor than a co-worker. Thus, incivility targets may refrain from directly confronting their high-level instigators out of fear that consequently these instigators could
negatively influence the formal work outcomes of the target, such as reward systems and social connections (Aquino et al., 2001).

Targets of supervisor incivility may be less likely to engage in CWB-P; however, it remains unclear whether these targets will engage in CWB-O as an alternative. Although some research has assessed separately the relation between incivility and both forms of CWB (i.e., CWB-O and CWB-P), this research has not distinguished between the sources of the incivility (e.g., supervisor and co-worker; Penney & Spector, 2005). Furthermore, researchers have not yet tested these associations with instances of cyber incivility. Thus, I assess the interaction between PCI and the source of the cyber incivility on the engagement in CWBs. Specifically, hypothesis 2 and 3 state:

*Hypothesis 2:* The source of the cyber incivility (supervisor or co-worker) will moderate the relation between PCI and engagement in CWB-Ps, incivility, and cyber incivility such that when the source of the cyber incivility is a supervisor, the relation between PCI and engagement in CWB-Ps, incivility, and cyber incivility will be weaker than if the source of the cyber incivility is a co-worker.

*Hypothesis 3:* The source of the cyber incivility (supervisor or co-worker) will moderate the indirect effect between personality and engagement in CWB-Ps, incivility, and cyber incivility through PCI, such that when the source of the cyber incivility is a supervisor, the indirect effect of personality on engagement in CWB-Ps, incivility, and cyber incivility through PCI will be weaker for neuroticism and stronger for conscientiousness and agreeableness than if the source of the cyber incivility is a co-worker.

Assuming cyber incivility targets who experience incivility from their supervisors will be less likely to engage in CWB-Ps, it is unclear whether they will have the same or more
inclination to engage in CWB-Os. In other words, it is unclear how the source of the cyber incivility might influence targets’ engagement in CWB-Os. Therefore, in the present study I propose the following research questions:

Research Question 3: Does the source of the cyber incivility moderate the relation between PCI and engagement in CWB-Os, such that targets are more or less likely to engage in CWB-Os when their PCI comes from a supervisor as opposed to a co-worker?

Research Question 4: Does the source of the cyber incivility moderate the indirect effect of personality on engagement in CWB-Os through PCI, such that targets are more or less likely to engage in CWB-Os when their PCI comes from a supervisor as opposed to a co-worker?

Studying these antecedent and moderating variables may help researchers to better understand the influence that incivility may have on negative work outcomes, as well as what dispositions may be associated with such experiences and negative outcomes. The final purpose of this research is to explore whether there are ways to mitigate these negative outcomes. Said differently, I will examine an additional moderating variable, job crafting, which could affect the extent to which targets of cyber incivility engage in CWBs.

Job Crafting

Although a form of job redesign, job crafting includes employee participation in the job redesign process. Researchers originally defined job crafting as a process in which employees actively make changes to the physical, cognitive, and relational characteristics of their work (Wrzesniewski & Dutton, 2001). These researchers asserted that job crafting came in three forms. First, employees may job craft by changing their task boundaries or modifying the actual type or scope of their job tasks. Second, employees may adjust their relational boundaries such
that they change the type or amount of interpersonal exchanges they have with others at work.

Lastly, job crafters may revise their cognitive task boundaries by changing their own perceptions of their work and the way they go about doing it (Wrzesniewski & Dutton, 2001). Although this provided an initial conceptualization of what job crafting might entail, researchers have since challenged this framework and argued that it is too general and too limited in its scope. In other words, researchers have argued that this definition does not address the actual behaviors of employees in the job crafting process, and that job crafting may take even more forms that fall outside of this definition. (Bakker, Tims, & Derks, 2012; Tims & Bakker, 2010). For example, Tims and Bakker (2010) framed job crafting within the job demands-resources (JD-R) model.

The JD-R model asserts that job demands and job resources make up the two broad categories of job characteristics that apply to all jobs, regardless of the specific job demands and resources that might be involved in any particular job. Job demands are aspects of a job that involve the exertion of ongoing physical or psychological effort such that there are physiological or psychological costs as a result. In contrast, job resources are aspects of a job that reduce the aforementioned job demands and their resulting costs or that facilitate the achievement of work goals, personal growth, learning, or development (Bakker & Demerouti, 2007).

Based on this model, Tims, Bakker, and Derks (2012) extracted four distinct dimensions of job crafting: increasing structural job resources, increasing social job resources, decreasing hindering job demands, and increasing challenging job demands. These dimensions refer to actions that employees can take to manipulate the job demands and resources in their jobs. For example, increasing structural job resources might refer to employees finding opportunity for self-development or increasing their level of autonomy in their work. In contrast, increasing social job resources refers to seeking resources like social support, feedback, or coaching from a
supervisor (Tims et al., 2012). On the job demands side, hindering demands are job demands that are overwhelming to employees and that impede the achievement of desired goals. These demands might include role ambiguity and conflict, interpersonal conflict, and any other demands that employees find to be mentally and emotionally taxing (Tims & Bakker, 2010; Tims et al., 2012). When employees lack the job resources to cope with and manage these hindering job demands, such demands can result in negative personal and organizational outcomes (Bakker, Demerouti, & Euwema, 2005; Crawford, LePine, & Rich, 2010). Thus, employees may engage in job crafting to reduce these hindering demands or to increase resources to combat these demands. In comparison to hindering job demands, challenging job demands are demands that are less taxing on employees and their job resources because the cost of challenging demands are offset by potential opportunities for growth, stimulation, mastery, and learning (Tims & Bakker, 2010; Tims et al., 2012). In fact, having too few challenging demands and a lack of stimulating work may actually result in several negative work outcomes among employees like absenteeism and job dissatisfaction (Kass, Vodanovich, & Callender, 2001). Therefore, when individuals have adequate job resources, they may craft their jobs so that they can take on more responsibility, increase their workloads, and expand the scope of their job to increase these challenging demands in their work (Tims & Bakker, 2010; Tims et al., 2012).

Because the integration of job crafting into the relation between cyber incivility and CWBs is exploratory in nature, this study will follow a similar theoretical rationale that Park et al., (2015) used to explain the relation between these variables. Within the stressor-strain framework and the JD-R model, researchers would classify incivility as a stressor, a form of interpersonal conflict, and a hindering job demand. As a result, this stressor could be associated
with a number of negative outcomes, including behavioral strains such as CWBs (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Penney & Spector, 2005). Thus, theoretically employees who experience a hindering job demand (i.e., cyber incivility) could craft their jobs in a number of ways to counteract the negative impact of such a demand. Namely, individuals could attempt to increase their structural or social job resources to cope better with the cyber incivility. Although there is no extant research that has demonstrated how job crafting itself could mitigate the negative impact of incivility, there is research that has shown how the resulting elements of job crafting could buffer the negative effects of hindering job demands like incivility. For example, researchers found that a social resource, social support at work, buffered the relation between incivility and multiple psychological strains (Miner, Settles, Pratt-Hyatt, & Brady 2012). Furthermore, Park et al., (2015) demonstrated a similar moderating effect that job control, a structural job resource, had on the association between cyber incivility and psychological and physiological strains. Thus, although this research does not involve a proactive effort from employees to attain more job resources (i.e., job crafting), it does show how having social and structural job resources (i.e., social support and job control) can mitigate the negative impacts of incivility. Accordingly, the present study pertains to the following hypotheses:

**Hypothesis 4:** Crafting a job to increase (a) social and (b) structural job resources will moderate the relation between PCI and engagement in CWBs such that the positive relation between PCI and the engagement in CWBs will be weaker when crafting a job to increase resources is high vs. low.

**Hypothesis 5:** Crafting a job to increase (a) social and (b) structural job resources will moderate the indirect effect between personality and engagement in CWBs through PCI.
such that the mediated effect between personality and the engagement in CWBs will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to increase resources is high vs. low.

Along the same lines, the effort-recovery model (ERM; Meijman & Mulder, 1998) and the conservation of resources (COR) theory (Hobfoll, 1989), albeit more general approaches, can further emphasize the importance of job resources and introduce the role that crafting a job to address job demands may play.

Similar to the JD-R, both the ERM and COR theory are centered on the notion that job demands or stressors have a taxing effect on individuals and their resources. As the ERM specifies, these demands result in load reactions, or negative responses that can manifest themselves in physiological, psychological, or behavioral ways. Thus, to stabilize these responses, individuals must remove their demands and undergo a recovery period to recharge their resources in preparation for new demands (Meijman & Mulder, 1998). Although much of the ERM research has focused on psychological detachment from these job stressors during periods outside of work (e.g., Sonnentag & Fritz, 2015), an alternative recovery process may be for individuals to rearrange elements of their work to reduce their hindering demands that are especially taxing upon their resources. In theory, this could aid with the recovery process and prevent negative reactions to the demands such as incivility and CWBs. Thus, I hypothesize:

*Hypothesis 6:* Crafting a job to decrease hindering job demands will moderate the relation between PCI and engagement in CWBs, such that the positive relation between PCI and the engagement in CWBs will be weaker when crafting a job to decrease hindering job demands is high vs. low.
Hypothesis 7: Crafting a job to decrease hindering job demands will moderate the indirect effect between personality and engagement in CWBs through PCI such that the mediated effect between personality and the engagement in CWBs will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to decrease hindering job demands is high vs. low.

In contrast to the ERM, the main principle of the COR theory is that individuals are predisposed to attain and protect resources that threatening stressors use and deplete (Hobfoll, 1989). Said differently, rather than reducing demands to recover, the COR theory states that individuals are always attempting to hold and build on their resources because threatening stressors may use up these resources. Thus, as in the JD-R model, individuals need resources to be able to manage their demands and crafting their jobs to acquire more social and structural job resources may be a process in which they do this. However, COR theory has a broader definition of job resources than the JD-R model and includes a process in which individuals may be willing to spend their resources for more highly valued resources. Of relevance to the present study are resources such as self-esteem, mastery, and skills. Specifically, individuals may be willing to devote some of their other resources, like time and energy, to acquire these more highly valued resources because these growth-oriented resources are able to mitigate the effects of future threatening stressors, and thus can prevent future resource loss (Hobfoll, 1989). Challenging job demands are associated with mastery, the development of new skills, and corresponding increases in self-efficacy. Thus, by crafting jobs to increase these types of demands, individuals may experience improvements in work attitudes like motivation, engagement, and satisfaction (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Crawford, et al., 2010; LePine, Podsakoff, & LePine, 2005) that would be inconsistent with engaging in
CWBs (e.g., Sulea et al., 2012). One study has demonstrated such an effect. Zhang, Mayer, and Hwang (2018) found that when employees engaged in mastery experiences in which they could learn something new, these experiences mitigated the positive association between hindrance demands and workplace deviance. Taken together, increasing challenging job demands may better equip employees to cope with threatening stressors (e.g., cyber incivility) and thus reduce the likelihood that they will engage in CWBs. Therefore, I hypothesize the following:

**Hypothesis 8:** Crafting a job to increase challenging demands will moderate the relation between PCI and engagement in CWBs, such that the positive relation between PCI and the engagement in CWBs will be weaker when crafting a job to increase challenging job demands is high vs. low.

**Hypothesis 9:** Crafting a job to increase challenging demands will moderate the indirect effect between personality and engagement in CWBs through PCI, such that the mediated effect between personality and the engagement in CWBs will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to increase challenging job demands is high vs. low.

**Methods**

**Participants and Procedure**

I collected data from 699 participants via Amazon Mechanical Turk (MTurk). Researchers have demonstrated that MTurk samples yield data that is comparable in quality to traditional samples (Buhrmester, Kwang, & Gosling, 2011) and that MTurk participants may even be more attentive survey participants than those in traditional samples (Hauser & Schwarz, 2016).
To qualify for participation in the study, individuals had to live in the United States, be at least 18 years of age, and be full-time employees (at least 35 hours per week) at a single job in one of several pre-specified job sectors (see Table 1 for a full list of qualified and unqualified job sectors). Additionally, only participants who reported that they communicated electronically (e.g., email, text, online chat) with their supervisor and/or co-workers at least once per day or more were qualified to participate in this study. Participants received $1.00 if they met these requirements and completed the survey in full. The survey software automatically removed participants from the survey for careless responses based on an attention-checking item on the survey. However, I also identified additional careless responses on open response items (e.g., reporting the same number for years of age as years of tenure at one’s organization) during data cleaning. I removed those participants, so the final sample included 642 participants.

**Measures**

**Personality.** To measure personality, I used the 20 item Mini-IPIP scales (Donnellan, Oswald, Baird, & Lucas, 2006). The Mini-IPIP scales are based on the larger 50-item International Personality Item Pool (IPIP) representation of the Big-Five lexical markers (Goldberg, 1992). For each personality factor, there are four indicator items. A sample conscientiousness item is, “I get chores done right away.” An example of an agreeableness item is, “I sympathize with others’ feelings.” A sample item from the neuroticism measure is, “I have frequent mood swings.” An example of an openness item is, “I have a vivid imagination.” Finally, a sample extraversion item is, “I am the life of the party.” Participants reported how accurately each statement described their general self on a 5-point scale (1 = “Very inaccurate,” 5 = “Very accurate”). Appendix A includes the full list of items from the five 4-item scales.
Perceptions of cyber incivility (PCI) and cyber incivility source. To measure PCI and the source from which participants perceived the cyber incivility I administered Lim and Teo (2009)’s 14-item cyber incivility measure twice for each participant. One measure asked about the perceived uncivil cyber behaviors coming from participants’ supervisors, and the second asked about those behaviors coming from participants’ co-workers. Apart from the source (i.e., supervisor or co-worker), the two measures were otherwise identical. Prior to analysis, I calculated a PCI score for each participant and a source variable in which I grouped participants into either a supervisor or co-worker source group. To do so, I assessed from which source each participant reported the most cyber incivility. Specifically, I averaged participants’ 14 responses from each PCI measure. If participants showed higher supervisor PCI scores compared to their co-worker PCI scores, I grouped those participants into the supervisor source group, and only used the responses from their supervisor PCI measure as their overall PCI responses. If participants’ co-worker PCI scores were highest, I did the opposite. It is important to note that 166 participants showed equal PCI scores from their supervisors and co-workers. Therefore, because the overall PCI scores would be the same regardless, I randomly assigned those participants into their source grouping.

On each of the two measures, participants reported the frequency they experienced various uncivil cyber behaviors during the past year on a 5-point scale (1 = “Not at all,” 5 = “All the time”). Sample items include, “Your SUPERVISOR(s) said something hurtful to you through email” and “Your CO-WORKER(s) ignored a request (e.g., schedule a meeting) that you made through email.” Appendix B displays the full cyber incivility measure.

Engagement in counterproductive work behaviors (including incivility). I measured the extent to which employees engage in CWBs with three separate instruments.
**Face-to-face workplace incivility.** To measure face-to-face incivility, I used the Workplace Incivility Scale (WIS; Cortina et al., 2001). The WIS is a list of 7 uncivil behaviors. Although Cortina and colleagues (2001) originally used the WIS to measure *experienced* incivility, Blau and Andersson (2005) demonstrated that simply reversing the perspective through the lead-in phrase can result in a measure of engagement in incivility that is distinct from the measure of experienced incivility. Thus, I used the lead-in phrase, “How often have you exhibited the following behaviors *in person* to someone at work during the past year” with the WIS to measure engagement in face-to-face incivility. Respondents responded on a 5-point scale (1 = “Never,” 5 = “Many times”). Sample items include, “Put someone down or was condescending to them” and “Paid little attention to someone’s statement or showed little interest in their opinion.” Appendix C displays the full list of items from the WIS.

**Engagement in cyber incivility (ECI).** I measured ECI with the same 14-item measure that I used to measure PCI (Lim & Teo, 2009). However, similar to the WSI, I changed the introduction statement of the measure from “Please rate the extent to which you have experienced each of these behaviors during the past year” to “How often have you engaged in the following behaviors to someone at work during the last year?” Researchers have used similar methods of reversing the lead-in statement to create distinct measures (Blau & Andersson, 2005). Participants responded on a 5-point frequency scale (1 = “Not at all,” 5 = “All the time”).

**Counterproductive work behaviors (CWBs).** To measure CWBs, I used the Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2005). The CWB-C is a 33-item measure that is divided into five dimensions: Sabotage (e.g., “Purposely wasted your employer’s materials/supplies”), withdrawal (e.g., “Came to work late without permission”), production deviance (e.g., “Purposely did your work incorrectly”), theft (e.g., “Stolen something...
belonging to your employer”), and abuse (e.g., “Started or continued a damaging or harmful rumor at work”). Sabotage, withdrawal, production deviance, and theft are also forms of CWB-O, whereas most of the abuse items are forms of CWB-P. Because the CWB-C also includes items that tap into the incivility content domain, I conducted an initial CFA that included the CWB-C and the WIS measure. Through theoretical rationale and the modification indices of this CFA, I identified items to remove from the CWB-C that theoretically and empirically overlapped with those on the WIS. Furthermore, although sabotage, withdrawal, production deviance, and theft items typically indicate the CWB-O construct, whereas abuse items typically indicate the CWB-P construct, the CFA also indicated that some items would better load onto the opposite construct. Thus, when it also made theoretical sense to do so, I moved items to indicate the opposite construct than they did initially. Through this process, I eliminated three items from the CWB-C measure and switched two items on the CWB-C to indicate the opposite factor. This resulted in 15 CWB-O items and 15 CWB-P items. Participants indicated the extent to which they had engaged in each of the 30 behaviors during the past year on a 5-point scale (1 = “Never,” 5 = “Every day”). Appendix D shows the full CWB-C that I used.

**Job crafting.** To measure the four dimensions of job crafting, I used the job crafting scale (JCS; Tims, et al., 2012). The JCS consists of 21 items in total, with five items loading onto each of the four job crafting facets except for the decreasing hindering job demands facet, which has 6 items loading onto it. Participants responded to each of the questions on a 5-point frequency scale (1 = “Never,” 5 = “Very often”). “I try to develop my capabilities” is a sample item from the increasing structural job resources facet. A sample item from the increasing social job resources facet includes, “I ask my supervisor to coach me.” One item from the increasing challenging job demands facet is, “When an interesting project comes along, I offer
myself proactively as a project co-worker.” Finally, an example of an item from the *decreasing hindering job demands* facet is, “I make sure that my work is mentally less intense.” Appendix E displays the full JCS.

**Demographic and control variables.** I asked participants to report on some demographic variables such as age and job sector. Based on previous research, I also measured and controlled for some additional variables. Appendix F shows the full list of demographic and control variables and their respective response options.

**Gender.** Research has shown that females may report higher frequencies of experienced incivility (Cortina et al., 2001). Thus, I measured and controlled for participants’ gender.

**Hours worked per week.** Because working more hours per week may increase the opportunity to experience cyber incivility and engage in CWBs, I controlled for the number of hours that participants worked per week.

**Job tenure.** Research has shown that job tenure may be associated with the engagement in CWBs (Berry et al., 2007). Thus, I measured and controlled for the number of years that participants have worked for their current employers.

**Use of electronic communication.** As part of the inclusion criteria, I required all participants to report how frequently they used electronic communication to communicate with their supervisor(s) and co-workers. Additionally, because those who tend to use electronic communication may have more opportunity to perceive or engage in cyber incivility, I controlled for electronic communication use. Participants reported their frequency of use on a 4-point scale (1 = “Several times per work day”, 4 = “Less than once per work day”). However, because the use of electronic communication at least once per day was an inclusion requirement, I removed all participants who chose the responses option, “Less than once per work day” from the study.
Results

Before reporting the results of the present study, it is important to first note that I could not test all of the proposed hypotheses. Specifically, due to severe issues with the personality measure, I was unable to use the participants’ personality data, and thus, I could not assess hypotheses pertaining to relationships between personality and the other constructs of interest. I explain the details of these measurement issues as well as the adjustments that I made to the hypothesized model in the following section.

Adjustment to the Hypothesized Model

Prior to testing any hypotheses, I conducted a series of confirmatory factor analyses (CFAs) to test the measurement models of each of the specified measures to ensure that the item indicators of each construct properly loaded onto their respective factors and to ensure that factors were distinct from one another. Despite acceptable model fit and factor loadings for all other measurement models, the CFA of the Mini-IPIP showed very poor model fit according to the recommended guidelines (Bentler & Bonnet, 1980; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler 1999; Marsh, Hau, & Wen, 2004), \( \chi^2 (160) = 1756.451, p < .001, CFI = .709, TLI = .655, RMSEA = .125 \ [ .119, .130 ], SRMR = .116 \). Upon further assessment, several of the personality items displayed low factor loadings (< .40; Ford, MacCullum, & Tait, 1986) onto their respective latent factors (Table 2). In order to improve the fit of the model, I removed the item with the lowest factor loading from each of the five factors. Although this improved the fit of the measurement model, the fit statistics were nearly all still below the recommended standards for acceptable model fit \( \chi^2 (80) = 576.133, p < .001, CFI = .88, TLI = .842, RMSEA = .098 \ [ .091, .106 ], SRMR = .073 \). Furthermore, the factor loadings of multiple items were still below .40 (Table 3). Finally, I conducted an exploratory factor analysis (EFA) to understand
further this lack of model fit (Table 4). Many items failed to load onto their respective factors, with several items cross-loading onto multiple factors. Thus, given the amount of apparent error present in the measure, I chose to remove the personality variables from the model.

The following analyses only included the analysis of the relations between PCI and its negative outcomes (i.e., CWBs) and the moderation of these particular relationships. Figure 2 shows the adjusted hypothesized model, with dotted lines indicating paths that I could no longer test, and solid lines indicating the hypothesized paths that remained. Without the inclusion of the personality variables, I could not test the indirect effects specified in Hypotheses 1, 3, 5, 7, or 9, or in Research Questions 1, 2, and 4. The indirect effects described in Hypothesis 1 and Research Questions 1 and 2 involved the relation between personality and CWBs through the PCI mediator. Although I could no longer assess the indirect effect of personality on CWBs, I could still assess the latter half of this mediation model, the direct effect between PCI and CWBs. Therefore, I revised Hypothesis 1 to reflect the assessment of the PCI to CWB direct effect (see Table 5 for a summary of these revisions). It was unnecessary to make similar modifications to Hypotheses 3, 5, 7, and 9 because Hypotheses 2, 4, 6, and 8 already included the respective direct effects that were nested within those conditional indirect effects hypotheses. Thus, in summary, given these changes to the variables included in the hypothesized model, the following analyses only include the assessment and discussion of Research Question 3, Hypotheses 2, 4, 6, and 8, and the revised (direct effects of) Hypothesis 1.

Hypothesis Testing

First, I cleaned the data in R Studio and ran a CFA with all variables that remained in the adjusted hypothesized model in order to calculate descriptive statistics and correlations. I calculated descriptive statistics of both observed variables (Table 6) and of latent variables
(Table 7) latent variable means in cross-sectional research are zero). The next step was to conduct a series of CFAs on each of the measures to ensure that items properly loaded onto their respective factors, but also to ensure that each of the measures were distinct from one another. Therefore, I also conducted several CFAs on combinations of theoretically similar measures. For example, I examined a 2-factor model that included both PCI and ECI. I then compared the 2-factor model to a 1-factor model in which both PCI and ECI loaded onto the same factor. I conducted a chi-square difference test ($\Delta \chi^2$) to confirm that the 2-factor model was the better fitting model. Additionally, because certain measures consisted of multiple factors (e.g., CWB-C, JCS), I also tested competing measurement models within a single measure. For example, the JCS is intended to be a four-factor measure; therefore, I also tested a 1-factor model and a 2-factor model within which I combined the two job demand factors together and the two job resources factors together.

Table 8 presents the fit statistics from all of the CFAs, including the competing models. Some measurement models displayed RMSEA values slightly above recommended values of .08 for adequate model fit. However, this tended to occur only among the models with smaller degrees of freedom ($df$) compared to the other measurement models. Research suggests that RMSEA values may improve (i.e., decrease) as $df$ values increase (Kenny, Kaniskan, & McCoach, 2015). Furthermore, all other fit indices were within acceptable ranges. Thus, I concluded that all measurement models yielded adequate-to-good model fit and they all yielded significantly superior fit to their respective competing models.

Next, I tested the hypotheses with structural equation modeling (SEM) in Mplus 8.0. The revised Hypothesis 1 proposed that PCI would positively predict the CWB outcomes. To assess this, I employed a two-step approach (Anderson & Gerbing, 1988) in which I first tested the
measurement model of the variables of interest, followed by the hypothesized structural model. Specifically, I conducted a CFA model that included PCI, CWB-O, CWB-P, engaged face-to-face incivility, and ECI to ensure adequate model fit before specifying the hypothesized structural model. The measurement model yielded adequate fit, $\chi^2 (2271) = 7180.47, p < .001$, $CFI = .911$, $TLI = .909$, $RMSEA = .058 [.057, .06]$, $SRMR = .042$. In the second step, to test the structural model, I added the hypothesized paths from PCI to the CWB outcomes. The fit indices of the structural model were similar to those of the measurement model, $\chi^2 (2249) = 7151.762, p < .001$, $CFI = .912$, $TLI = .908$, $RMSEA = .058 [.057, .06]$, $SRMR = .041$. Lastly, the path coefficients of the structural model showed that while controlling for participants’ sex, average hours worked per week, electronic communication use, and tenure, PCI was positively associated with all CWB outcomes (Table 9). Thus, the revised hypothesis 1 was fully supported.

Because the remaining hypotheses involved moderation, I tested the latent variable interactions with the Latent Moderated Structural Equations (LMS) method (Klein & Moosbrugger, 2000). Specifically, I followed a three-step process for estimating latent variable interactions (Klein & Moosbrugger, 2000; Maslowsky, Jager, & Hemken, 2016). Like the analyses for the revised Hypothesis 1, for steps one and two I assessed a measurement model and then a structural model that included one moderating variable but not the interaction term. In the third step I added the interaction term so that I could compare the structural model without the interaction term (step 2) to the structural model with the interaction term (step 3). Henceforth, I will refer to the model in this third step as the interaction model. These steps are necessary because LMS models are not able to compute the absolute or incremental fit indices (e.g., $\chi^2$, $CFI$, $TLI$, $RMSEA$ etc.) that researchers typically use to indicate the fit of a model. However, Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) fit statistics are
available. Although the absolute values of these information criteria alone are not indicators of absolute model fit, the differences in the AIC and BIC values across different models are indicators of relative fit. That is, when comparing two models, the model with the smaller AIC and BIC values is the superior fitting model (Sardeshmukh & Vandenberg, 2017). Therefore, I used the fit of the structural model in step two as a baseline and compared the AIC and BIC values of the structural models in steps 2 and 3 to ensure that the interaction model demonstrated superior fit to the baseline structural model. In other words, I calculated ΔAIC and ΔBIC by subtracting the AIC and BIC values of step 2 from the AIC and BIC values of step 3, respectively. Thus, negative ΔAIC and ΔBIC values in Table 10 indicate a superior interaction model compared to the structural model of step 2. Using this method, I was also able to calculate the ΔR² by subtracting the R² value of the initial structural model from the R² value of the interaction model to account for any additional variance that the interaction term alone explained in the model (Maslowsky et al., 2016).

Because the overall hypothesized model included five moderators, for statistical and practical reasons, I assessed each of the moderators separately. Thus, to test Hypothesis 2 and Research Question 3, I followed this three-step procedure to first assess the moderating effect of cyber incivility source (i.e., supervisor or co-worker) on the relation between PCI and the CWB outcomes. Table 10 displays the fit statistics of each step in the process and for each of the five moderators.

**Cyber incivility source.** Hypothesis 2 posited that the source of the cyber incivility (supervisor vs. co-worker) would moderate the positive association between PCI and CWB-Ps, engaged face-to-face incivility, and ECI. Specifically, I predicted that when the source of the cyber incivility was a supervisor as opposed to a co-worker, the positive relation between PCI
and the aforementioned negative outcomes would be weaker. Furthermore, in Research Question 3, I inquired as to whether the cyber incivility source would also moderate the relation between PCI and CWB-Os. The fit statistics of each of the three steps for the source moderator in Table 10 show that the measurement and structural model (steps 1 and 2) demonstrated adequate model fit; however, the ΔAIC and ΔBIC values indicated that model fit did not improve after adding the interaction term (step 3). Furthermore, the path coefficients of the interaction model show that the interaction term was not statistically significant for any of the four CWB outcomes and the ΔR² from step 2 to 3 indicated that the interaction term did not explain any additional variance (Table 11). Thus, Hypothesis 2 was not supported. Furthermore, with regard to Research Question 3, the source of the cyber incivility did not moderate the effect between PCI and CWB-O. Next, I assessed the moderating role of job crafting behaviors.

**Job crafting to increase social and structural job resources.** Hypotheses 4a and 4b predicted that crafting a job to increase social and structural job resources would have a moderating effect on the relation between PCI and the four CWB outcomes. Specifically, I hypothesized that the positive association between PCI and the CWBs would be weaker when individuals engaged in more as opposed to fewer job crafting behaviors to increase their social and structural job resources. Table 10 shows that the measurement and structural models with the social job resources moderator demonstrated adequate fit and that the interaction model yielded superior fit to the structural model. Furthermore, the interaction of PCI by crafting social job resources was statistically significant for each of the four CWB outcomes. Table 12 shows that the interaction term also accounted for additional variance for each of the four CWB outcome variables. To interpret these significant interactions, I created plots for each of the CWB outcome variables. Specifically, I calculated and plotted (Figure 3) the simple slopes of
the social resources moderator at one standard deviation above and below its mean for each of
the four CWB outcomes. The simple slopes for all significant interactions are displayed in Table
13. Although the social resources simple slopes were statistically significant, the relationships
were in the opposite direction than expected. In other words, the positive relation between PCI
and each of the CWB outcomes was stronger when job crafting for social resources was high vs.
low. Thus, Hypothesis 4a was not supported.

Similar to Hypothesis 4a, Table 10 shows that the measurement and structural models
with the structural resources job crafting moderator also demonstrated acceptable model fit.
However, although the AIC of the interaction model was lower than the AIC of the structural
model (indicating superior fit), the BIC value was slightly higher in the interaction model
compared to the structural model (indicating inferior fit). This inconsistency may have occurred
because the interaction only related significantly to the CWB-O outcome, and not any of the
other three CWB outcomes (Table 14). Although the interaction term was significant when
regressed on the CWB-O outcome, the effect was relatively small, and the interaction only
accounted for 1% of additional variance. Nonetheless, using the same method from hypothesis
4a, I calculated (Table 13) and plotted (Figure 4) the simple slopes of the structural resources job
crafting moderator for the CWB-O outcome. As seen in Figure 4, the relation between PCI and
CWB-O was still positive despite the level of job crafting for structural resources; however, the
association was slightly weaker when job crafting was high, as opposed to low. Thus,
Hypothesis 4b was partially supported for one of the four CWB outcomes.

Crafting to decrease hindering job demands. Hypothesis 6 posited that crafting to
decrease hindering job demands would weaken the relation between PCI and the CWB
outcomes. As displayed in Table 10 the measurement and structural models demonstrated
adequate fit, and the fit improved when the interaction term was added to the final model. Table 15 shows that the interaction was statistically significant, and it accounted for additional variance for each of the CWB outcomes. The simple slopes in Table 13 were also statistically significant; however, as Figure 5 shows, similar to the findings for Hypothesis 4a, crafting to decrease hindering job demands seemed to have the opposite effect on the relation between PCI and the CWB outcomes than was expected. Specifically, when crafting to decrease hindering job demands was high, the positive relations between PCI and the CWBs were stronger than when crafting to decrease hindering demands was low. Therefore, despite the significant interactions, Hypothesis 6 was not supported.

**Crafting to increase challenging job demands.** Finally, Hypothesis 8 predicted that when crafting to increase challenging demands was high, the positive relation between PCI and the engagement in CWBs would be weaker than when crafting to increase challenging demands was low. The fit statistics in Table 10 show that the measurement and structural models yielded acceptable fit and the interaction model demonstrated superior fit to the structural model. The PCI by challenging demands job crafting interaction significantly related to each of the four CWB outcomes, and the interaction explained small amounts of additional variance for each outcome (Table 16). However, similar to in Hypotheses 4a and 6, upon assessment of the simple slopes (Table 13) and the interaction plots (Figure 6), it was evident that the effect of the interaction was in the opposite direction than expected for each of the four CWB outcomes. Specifically, the PCI to CWB relation was stronger when crafting to increase challenging demands was high vs. low. Thus, Hypothesis 8 was not supported.

Because all of the data came from a single survey, common method bias is a concern. Therefore, I conducted two tests to diagnose whether common method bias was present in this
study (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). First, I conducted a CFA in which all items loaded onto their respective latent factors and then onto an additional latent method factor. In this test, if the latent method factor can account for a majority portion of the models’ variance, then this may indicate a problematic level of common method bias. However, likely due to the large number of indicators, this model did not converge. Therefore, as an alternative, I conducted Harman’s single-factor test. This method is similar to the latent variable method above; however, it instead involves the use of an unrotated EFA to test whether a single factor can account for the majority of the variance (Podsakoff et al., 2003). In this test, a single factor did account for the majority of the variance (54%) with many, but not all items, loading onto that single factor. These findings indicate that a high level of common method bias may have been present in this study. However, I discuss potential alternative explanations in the Limitations section.

**Discussion**

The first purpose of this study was to investigate the potential link between employees’ PCI and their engagement in various CWBs. The extant cyber incivility literature discusses several negative outcomes associated with perceptions of cyber incivility (e.g., Giumetti et al., 2012; Giumetti et al., 2016, Lim & Teo, 2009, Park et al., 2015); however, the literature has failed to address many of the potential behavioral outcomes of cyber incivility (Miner et al., 2018). Thus, the present study closes that gap in the literature somewhat by demonstrating links between PCI and various CWBs. Specifically, the results showed that when employees perceived more cyber incivility, they also tended to engage in more CWBs directed at both their organizations and other individuals, including the engagement in more face-to-face and cyber incivility toward others (Hypothesis 1). These findings are consistent with research in the
incivility literature that has shown positive associations between face-to-face incivility and CWBs (Mao et al., 2017; Penney & Spector, 2005). Furthermore, although the cross-sectional nature of this study limits the claim that employees’ PCI will result in their subsequent engagement in CWBs, these results do provide initial support for the possibility that cyber incivility may also result in a spiraling effect that researchers have proposed (Andersson & Pearson, 1999) and examined (e.g., Bunk & Magley, 2013) in the incivility literature. Future studies should aim to replicate these findings within a longitudinal design to understand further the causal direction of these relations.

The second purpose of this study was to assess various moderating factors of this association between individuals’ PCI and their engagement in CWBs. I first assessed whether employees who frequently experienced uncivil cyber behaviors tended to engage in CWBs more or less frequently depending on whether the cyber incivility came from their supervisors as opposed to their co-workers. I anticipated that when employees experienced cyber incivility from a co-worker, they would be more likely to engage in CWBs directed at other individuals (i.e., CWB-Ps, incivility, and cyber incivility) than if they had experienced the cyber incivility from their supervisor (Hypothesis 2). However, results suggested that the engagement in any CWBs (including CWB-Os; Research Question 4) did not differ regardless of who respondents deemed the source of the PCI. One possible explanation is that, despite having only one source grouping per participant, in most cases, participants still reported experiencing some, and often similar, amounts of cyber incivility from the opposite source as well. In other words, although most participants reported that they experienced more cyber incivility from one source compared to the other, this does not mean that these participants experienced no cyber incivility from the
other source. Therefore, with potentially only very small differences in PCI across source groupings, finding any differential effects across groupings proved to be difficult.

Next, I investigated whether cyber incivility victims’ engagement in CWBs differed as a function of their job crafting behaviors. Specifically, by leveraging multiple theoretical frameworks, such as the stressor-strain framework and the conservation of resources (COR) theory, I anticipated that employees who engaged in job crafting behaviors would be better equipped to cope with their PCI and thus, would engage in fewer CWBs. Said differently, I contended that job crafting might provide crafters with valued resources and reduced hindering demands. Therefore, I expected that compared to individuals who rarely job craft, frequent crafters would have the ability to choose healthier mechanisms of coping with PCI rather than engaging in CWBS.

I examined each of the four job crafting dimensions separately. Interestingly, three of the four job crafting dimensions did significantly moderate the relation between employees’ PCI and their engagement in CWBs; however, these moderations had the opposite effect than what I expected in the analyses pertaining to Hypotheses 4a, 6, and 8. When employees experienced cyber incivility, they tended to engage in more CWBs when they were also engaging in more, as opposed to fewer, job crafting behaviors. The one exception to these findings was for the structural resources job crafting dimension. That dimension had a moderating effect in the expected direction; however, this was only true for CWB-Os and not any other type of CWB. In other words, when employees engaged in more as opposed to fewer crafting behaviors to increase their structural resources, the positive relation between employees’ PCI and their engagement in CWB-Os was weaker. Thus, although employees who frequently experienced cyber incivility also tended to frequently engage in CWB-Os, they engaged in fewer CWB-Os
when they were also engaging in more, as opposed to fewer, crafting behaviors to increase their structural resources. Although it is possible that the structural job resources job crafting dimension differed from the others by chance, I provide some alternative explanations in the sections below.

Despite that most of these findings differ from the proposed hypotheses, there are some plausible explanations for such findings. First, it is important to note that the present study only assessed the self-reported engagement in job crafting and not the resulting outcomes of job crafting. Therefore, although it seems that the engagement in some job crafting behaviors bolstered cyber incivility victims’ likelihood to engage in CWBs, this does not necessarily discount job crafting as a coping tool because the resulting outcomes of the job crafting behaviors were unknown. This is an important distinction because the engagement in job crafting behaviors does not always equate to successful job crafting (Berg, Dutton, & Wrzesniewski, 2013; Wrzesniewski & Dutton, 2001) and a proper balance of job demands and resources is not always produced via job crafting. Thus, there may be individuals who attempt to craft their jobs but still do not successfully modify their job demands to their liking or attain the adequate resources that they need to properly cope with the demands they face (e.g., cyber incivility). On the other hand, there may be individuals who are already naturally situated with a balanced job demands-resources ratio, and thus, have no need for engaging in job crafting. Therefore, it is possible that, in the present study, those who reported frequent engagement in job crafting behaviors were at the beginning of their job crafting efforts or were unsuccessful in their attempts. While, in contrast, those who reported infrequent engagement in job crafting behaviors may have already achieved a relatively stable balance in their job demands and resources, and therefore, had less need for further crafting. Both of these examples demonstrate how it is
possible that job crafting did not mitigate the effects between PCI and CWB. The cross-sectional nature of this study may further explain why the engagement in job crafting appeared to bolster the effect between PCI and CWBs in most cases.

Because this was a cross-sectional study, the causal nature of the relations between PCI, job crafting, and CWB are unclear. It is possible that those who craft their jobs to better fit their own needs may elicit more uncivil cyber behaviors from others, and as the present study demonstrates, these uncivil cyber experiences are associated with CWBs. For example, frequent modifications to one’s demands or requests to one’s supervisor or colleagues for coaching, feedback, or advice may irritate others and cause them to respond with cyber incivility, such as ignoring emails or making rude and dismissive remarks. In turn, individuals may experience this incivility and then engage in CWBs, possibly as a result of their initial job crafting efforts. In this example, job crafting becomes the causal antecedent of this chain of events. Although this was not the anticipated relation, it may explain why job crafting seemed to strengthen the association between PCI and CWBs. Because this was a cross-sectional study, I cannot rule out the possibility of this alternative explanation of causal direction.

Unlike the other three dimensions, job crafting to increase structural resources did not amplify the relation between PCI and CWB. Moreover, this job crafting dimension had the expected, mitigating effect on the relation between PCI and CWB-Os. In other words, when victims of frequent cyber incivility crafted their jobs to increase their structural resources (e.g., developing oneself, learning new things on the job), they engaged in fewer CWB-Os than individuals who did not craft to increase their structural resources. These findings are consistent with research that has shown that structural job resources can reduce the resulting strains of cyber incivility (Park et al., 2015). However, it is important to understand why the other job
crafting dimensions had an amplifying effect on the PCI-CWB relation, but job crafting to increase structural resources did not.

One explanation may be that it is more difficult to make adjustments to one’s social resources and challenging and hindering demands, whereas increasing one’s structural resources is a more attainable task. Therefore, it is possible that employees in this study were simply more successful at increasing their structural resources on a consistent basis than any other job crafting attempt, thus we only observed the expected outcome on the PCI-CWB-O relation with the structural resources job crafting dimension. Second, if job crafting is actually the antecedent to PCI which then results in CWBs, one possible explanation is that increasing one’s structural resources may not have the same negative impact on others that the other three dimensions have. For example, with job crafting to increase social resources, individuals are highly reliant on others to acquire their desired social job resources. This dimension of job crafting involves a high amount of interpersonal interaction, and thus, there is an increased risk of both the perception of, and engagement in cyber incivility. Furthermore, job crafting to influence one’s hindering and challenging job demands may have a negative effect on others because it involves making changes to one’s actual job tasks. Other employees may view these changes unfavorably and this could also lead to potential uncivil behaviors. In comparison, job crafting to increase structural resources is less reliant on others and involves an independent and less visible effort to grow, develop, and act with autonomy. Therefore, if job crafting is an antecedent to PCI, it is a likely explanation that the structural job resources dimension would be among the least likely to result in PCI compared to the other more interpersonal and visible job crafting dimensions.
Practical Implications

Although not all of the present study’s hypotheses were supported, these findings nonetheless may have significant implications for practitioners and future research. This study demonstrated the powerful effects that frequent experiences with uncivil cyber interactions may have on victims’ behaviors; particularly on behaviors that are harmful to their workplaces. These findings suggest that even the perception of minor interpersonal infractions may be associated with far more severe CWBs directed at individuals or the organization itself. Thus, when communicating with subordinates or co-workers via electronic communication, individuals should be mindful that even something as minor as an ignored email may have a strong negative impact when it occurs often enough and in combination with other minor uncivil actions. Furthermore, managers should attempt to understand the frequency in which cyber incivility occurs within their organizations so that they might be amenable to possible interventions to counter it.

Although the present study was primarily focused on the mitigation of the negative responses to cyber incivility (via job crafting), an alternative, albeit, perhaps more difficult approach may be to focus on reducing the occurrences of uncivil cyber interactions in the first place. It is unlikely that organizations could rid themselves of all cyber incivility due to its ambiguous nature (Kunkel & Davidson, 2014). However, organizations may be able to train employees to be more mindful about their sent and received cyber communications in order to reduce both actual and perceived uncivil cyber behaviors.

Additionally, it is important to note that although most of the job crafting moderators did not have the expected effect as coping tools for employees, they nonetheless all had some effect on the relation between PCI and CWBs. This suggests that job crafting, or perhaps the resources
or demands associated with job crafting, do play a significant role in this relationship. These findings provide initial evidence that organizations may use these crafting behaviors as levers to influence the negative outcomes that are associated with cyber incivility; however, future research is needed to fully understand the full influence of these job crafting behaviors.

Limitations and Future Research

This study relied upon a single survey with self-reported data and this method has some drawbacks. As noted earlier, for example, the first potential drawback is the presence of common method bias. The EFA that I conducted to detect common method bias showed that a single factor did account for most of the variance. Although this may indicate that a significant amount of common method bias was present in this study, it is also possible that this shared variance was due to actual causal relations between the variables as well (Podsakoff, et al., 2003). Nonetheless, future research may aim to use multiple-methods and sources of data collection to mitigate common method bias issues. Additionally, with self-reported data participants may feel pressured to respond to items in a manner that presents themselves in a socially favorable light. This is especially relevant for sensitive information such as CWBs. This social desirability can skew relations between constructs. Although it would be ideal to collect these types of data from multiple sources, self-report may be the only appropriate source of measurement for certain constructs due to the availability of information. For example, information about another’s PCI cannot be known by anyone other than the individual who perceives the cyber incivility. Furthermore, by nature, individuals may engage in CWBs in private to avoid detection from others; thus, reports from others on these behaviors may be less valuable than self-reports. Nonetheless, future research could include measures of social desirability to detect and control for these artifacts (Podsakoff et al., 2003).
Another limitation of the present research is that it was a cross-sectional study. Therefore, I am not able to determine the causal relation between PCI, job crafting, and CWBs. For instance, although it is possible that individuals may experience cyber incivility and then respond with CWBs, it is equally possible that individuals engage in CWBs and then the victims or witnesses of these CWBs react uncivilly toward the perpetrator in response to these initial CWBs. Longitudinal research is needed to fully understand how these behaviors temporally relate to one another.

Additionally, as previously mentioned, because the present study only measured job crafting behaviors and not actual changes in employees’ job demands and resources, the effects of the job crafting moderators remain somewhat unclear. Future job crafting research should measure both crafting behaviors and their respective outcomes (e.g., Tims, Bakker, & Derks, 2013) to fully understand the role that job crafting can play in any scenario.

One final issue that limited the scope of the present study was the poor fit of the personality measurement model. Although previous research had yielded adequate fit of this measurement model (Donnellan et al., 2006), this was not the case in the present study, and it led to the removal of the personality variables. I aimed to fill a gap in the literature with regard to whether the relations between personality traits and cyber incivility were similar to those found in the face-to-face incivility literature (e.g., Sliter et al., 2014). Furthermore, I intended to assess whether cyber incivility mediated the established relation between personality and CWBs (e.g., Berry et al., 2007). However, due to the poor fit of the personality measurement model, I was unable to test these associations. Nonetheless, the results that this study yielded may demonstrate that the role of personality among these variables may yet be an important one. For example, there is a clear association between cyber incivility and CWBs; however, it is unknown
whether certain people experience more cyber incivility than others. Furthermore, being able to include personality traits in the model as I had intended may have provided additional information about the results of the job crafting moderators. For instance, although most job crafting dimensions had the opposite effect than I expected, perhaps these findings would have been different or easier to interpret if I could have tested the indirect effect of personality. It may be that individuals who are high in certain personality traits would have benefitted more or less from job crafting behaviors compared to individuals who are low in those traits. Therefore, I encourage researchers to attempt to understand how the findings from the present study might differ from one person to the next.

Despite these limitations, this research showed that a strong association exists between cyber incivility and CWBs. Therefore, researchers need to determine what organizations can do to reduce these negative behaviors. Assuming the expected casual direction of the PCI and CWBs relations, future research could further assess how job crafting or other interventions may equip cyber incivility victims with the means to cope with their experienced incivility before it manifests into CWBs. Alternatively, and as previously mentioned, researchers may also choose to implement training practices or interventions that may reduce the occurrence of uncivil cyber behaviors in the first place.

**Conclusion**

This study helps to confirm further, that even low intensity behaviors like cyber incivility can be linked to potentially severe negative outcomes like CWBs. Moreover, this study is among the first to demonstrate that job crafting behaviors may play some role in this association between cyber incivility and CWBs. Although most of the job crafting results were in an unexpected direction, these findings still shed some light on job crafting as a potential lever for
employers to address when attempting to address the potential negative outcomes of cyber incivility.
References


### Table 1

**List of Qualified and Unqualified Job Sectors for Participation in the Present Study**

<table>
<thead>
<tr>
<th>Job Sector</th>
<th>Qualified/Unqualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business and Financial Operations</td>
<td>Qualified</td>
</tr>
<tr>
<td>Computer and Mathematical</td>
<td>Qualified</td>
</tr>
<tr>
<td>Architecture and Engineering</td>
<td>Qualified</td>
</tr>
<tr>
<td>Life, Physical, and Social Science</td>
<td>Qualified</td>
</tr>
<tr>
<td>Community and Social Service</td>
<td>Qualified</td>
</tr>
<tr>
<td>Legal</td>
<td>Qualified</td>
</tr>
<tr>
<td>Education, Training, and Library</td>
<td>Qualified</td>
</tr>
<tr>
<td>Arts, Design, Entertainment, Sports, and Media</td>
<td>Qualified</td>
</tr>
<tr>
<td>Healthcare Practitioners and Technical</td>
<td>Qualified</td>
</tr>
<tr>
<td>Healthcare Support</td>
<td>Qualified</td>
</tr>
<tr>
<td>Protective Service</td>
<td>Qualified</td>
</tr>
<tr>
<td>Food Preparation and Serving Related Occupations</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Building and Grounds Cleaning and Maintenance</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Personal Care and Service</td>
<td>Qualified</td>
</tr>
<tr>
<td>Sales and Related Occupations</td>
<td>Qualified</td>
</tr>
<tr>
<td>Office and Administrative Support</td>
<td>Qualified</td>
</tr>
<tr>
<td>Farming, Fishing, and Forestry</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Construction and Extraction</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Installation, Maintenance, and Repair</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Production</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Transportation and Material Moving</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Military Specific Occupations</td>
<td>Unqualified</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Varied based on specification</td>
</tr>
</tbody>
</table>
Table 2
*CFA Factor Loadings of the 20-Item Mini-IPIP Scales*

<table>
<thead>
<tr>
<th>Factor and Item</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Neuroticism</strong></td>
<td></td>
</tr>
<tr>
<td>1. I have frequent mood swings.</td>
<td>.834</td>
</tr>
<tr>
<td>2. I am relaxed most of the time (-).</td>
<td>.365</td>
</tr>
<tr>
<td>3. I get upset easily.</td>
<td>.791</td>
</tr>
<tr>
<td>4. I seldom feel blue (-).</td>
<td>.276</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td></td>
</tr>
<tr>
<td>1. I sympathize with others’ feelings.</td>
<td>.445</td>
</tr>
<tr>
<td>2. I am not interested in other people’s problems (-).</td>
<td>.802</td>
</tr>
<tr>
<td>3. I feel others’ emotions.</td>
<td>.332</td>
</tr>
<tr>
<td>4. I am not really interested in others (-).</td>
<td>.897</td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td></td>
</tr>
<tr>
<td>1. I get chores done right away.</td>
<td>.338</td>
</tr>
<tr>
<td>2. I often forget to put things back in their proper place (-).</td>
<td>.753</td>
</tr>
<tr>
<td>3. I like order.</td>
<td>.346</td>
</tr>
<tr>
<td>4. I make a mess of things (-).</td>
<td>.908</td>
</tr>
<tr>
<td><strong>Openness to Experience</strong></td>
<td></td>
</tr>
<tr>
<td>1. I have a vivid imagination.</td>
<td>.305</td>
</tr>
<tr>
<td>2. I am not interested in abstract ideas (-).</td>
<td>.787</td>
</tr>
<tr>
<td>3. I have difficulty understanding abstract ideas (-).</td>
<td>.833</td>
</tr>
<tr>
<td>4. I do not have a good imagination (-).</td>
<td>.714</td>
</tr>
<tr>
<td><strong>Extraversion</strong></td>
<td></td>
</tr>
<tr>
<td>1. I am the life of the party.</td>
<td>.336</td>
</tr>
<tr>
<td>2. I don’t talk a lot (-).</td>
<td>.790</td>
</tr>
<tr>
<td>3. I talk to a lot of different people at parties.</td>
<td>.530</td>
</tr>
<tr>
<td>4. I keep in the background (-).</td>
<td>.716</td>
</tr>
</tbody>
</table>

*Note.* Reverse coded items are labeled with (-).
Table 3  
*CFA Factor Loadings of the Modified, 16-Item Mini-IPIP Scales*

<table>
<thead>
<tr>
<th>Factor and Item</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Neuroticism</strong></td>
<td></td>
</tr>
<tr>
<td>1. I have frequent mood swings.</td>
<td>.831</td>
</tr>
<tr>
<td>2. I am relaxed most of the time (-).</td>
<td>.339</td>
</tr>
<tr>
<td>3. I get upset easily.</td>
<td>.788</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td></td>
</tr>
<tr>
<td>1. I sympathize with others’ feelings.</td>
<td>.414</td>
</tr>
<tr>
<td>2. I am not interested in other people’s problems (-).</td>
<td>.795</td>
</tr>
<tr>
<td>4. I am not really interested in others (-).</td>
<td>.909</td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td></td>
</tr>
<tr>
<td>2. I often forget to put things back in their proper place (-).</td>
<td>.745</td>
</tr>
<tr>
<td>3. I like order.</td>
<td>.325</td>
</tr>
<tr>
<td>4. I make a mess of things (-).</td>
<td>.914</td>
</tr>
<tr>
<td><strong>Openness to Experience</strong></td>
<td></td>
</tr>
<tr>
<td>2. I am not interested in abstract ideas (-).</td>
<td>.783</td>
</tr>
<tr>
<td>3. I have difficulty understanding abstract ideas (-).</td>
<td>.842</td>
</tr>
<tr>
<td>4. I do not have a good imagination (-).</td>
<td>.694</td>
</tr>
<tr>
<td><strong>Extraversion</strong></td>
<td></td>
</tr>
<tr>
<td>2. I don’t talk a lot (-).</td>
<td>.834</td>
</tr>
<tr>
<td>3. I talk to a lot of different people at parties.</td>
<td>.456</td>
</tr>
<tr>
<td>4. I keep in the background (-).</td>
<td>.693</td>
</tr>
</tbody>
</table>

*Note.* Reverse coded items are labeled with (-).
Table 4  
**EFA Factor Loadings of the 20-Item Mini-IPIP Scales.**

<table>
<thead>
<tr>
<th>Factor and Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Neuroticism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I have frequent mood swings.</td>
<td>-.719</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I am relaxed most of the time (-).</td>
<td>-.397</td>
<td>-.232</td>
<td>-.277</td>
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<td></td>
</tr>
<tr>
<td>3. I get upset easily.</td>
<td>-.641</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I seldom feel blue (-).</td>
<td>-.368</td>
<td>-.298</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I sympathize with others’ feelings.</td>
<td></td>
<td>.384</td>
<td>.647</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I am not interested in other people’s problems (-).</td>
<td></td>
<td>.786</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I feel others’ emotions.</td>
<td></td>
<td>.309</td>
<td>.589</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am not really interested in others (-).</td>
<td></td>
<td>.726</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td></td>
<td>.494</td>
<td>-.255</td>
<td>.419</td>
<td></td>
</tr>
<tr>
<td>1. I get chores done right away.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I often forget to put things back in their proper place (-).</td>
<td>.713</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I like order.</td>
<td>.404</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I make a mess of things (-).</td>
<td>.737</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Openness to Experience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I have a vivid imagination.</td>
<td>-.223</td>
<td>.264</td>
<td>.710</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I am not interested in abstract ideas (-).</td>
<td>.268</td>
<td></td>
<td>.496</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I have difficulty understanding abstract ideas (-).</td>
<td>.417</td>
<td></td>
<td>.434</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I do not have a good imagination (-).</td>
<td></td>
<td></td>
<td>.744</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Extraversion</strong></td>
<td></td>
<td>-.268</td>
<td>.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I am the life of the party.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I don’t talk a lot (-).</td>
<td></td>
<td>.574</td>
<td>.310</td>
<td>-.228</td>
<td></td>
</tr>
<tr>
<td>3. I talk to a lot of different people at parties.</td>
<td></td>
<td>.782</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I keep in the background (-).</td>
<td>.246</td>
<td>.567</td>
<td>-.305</td>
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<td></td>
</tr>
</tbody>
</table>

*Note.* Only factor loadings greater than .20 are reported. Reverse coded items are labeled with (-).
Table 5
Revisions and Combining of Hypothesis 1 and Research Questions 1 and 2

<table>
<thead>
<tr>
<th>Original Hypothesis and Research Questions</th>
<th>Revised Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1:</strong> PCI will mediate the association between personality (i.e., agreeableness, conscientiousness, and neuroticism) and the engagement in CWBs.</td>
<td><strong>Hypothesis 1:</strong> PCI will be positively associated with the engagement in CWBs.</td>
</tr>
<tr>
<td><strong>Research Question 1:</strong> Will PCI mediate the association between openness to experience and the engagement in CWBs</td>
<td></td>
</tr>
<tr>
<td><strong>Research Question 2:</strong> Will PCI mediate the association between extraversion and the engagement in CWBs?</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>M</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td>1. PCI</td>
<td>2.22</td>
</tr>
<tr>
<td>2. Structural</td>
<td>3.73</td>
</tr>
<tr>
<td>3. Social</td>
<td>2.77</td>
</tr>
<tr>
<td>4. Challenge</td>
<td>3.11</td>
</tr>
<tr>
<td>5. Hindrance</td>
<td>2.70</td>
</tr>
<tr>
<td>6. CWB-O</td>
<td>1.82</td>
</tr>
<tr>
<td>7. CWB-P</td>
<td>1.64</td>
</tr>
<tr>
<td>8. Incivility</td>
<td>2.07</td>
</tr>
<tr>
<td>9. ECI</td>
<td>1.87</td>
</tr>
<tr>
<td>10. Hours per week</td>
<td>41.77</td>
</tr>
<tr>
<td>11. Tenure (months)</td>
<td>75.36</td>
</tr>
<tr>
<td>12. Electronic Comm.</td>
<td>2.01</td>
</tr>
<tr>
<td>13. Source</td>
<td>.50</td>
</tr>
<tr>
<td>14. Sex</td>
<td>1.48</td>
</tr>
</tbody>
</table>

**Notes.** PCI = Perceived Cyber Incivility.
Structural, Social, Challenge, and Hindrance refer to the four job crafting dimensions.
CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
Electronic Comm: 1 = “Several times per work day”, 2 = “A few times per work day”, 3 = “Once per work day”
Source: 0 = Co-Worker, 1 = Supervisor
Sex: 1 = Male, 2 = Female
* p < .05
Table 7
Descriptive Statistics and Correlation Coefficients of Latent Variables (N = 642)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PCI</td>
<td>--</td>
<td>1.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Structural</td>
<td>--</td>
<td>.82</td>
<td>-.13*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Social</td>
<td>--</td>
<td>.92</td>
<td>.47*</td>
<td>.36*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Challenge</td>
<td>--</td>
<td>.93</td>
<td>.21*</td>
<td>.69*</td>
<td>.65*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Hindrance</td>
<td>--</td>
<td>.87</td>
<td>.57*</td>
<td>.00</td>
<td>.47*</td>
<td>.26*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. CWB-O</td>
<td>--</td>
<td>1.04</td>
<td>.87*</td>
<td>-.13*</td>
<td>.49*</td>
<td>.24*</td>
<td>.56*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. CWB-P</td>
<td>--</td>
<td>.99</td>
<td>.86*</td>
<td>-.11*</td>
<td>.51*</td>
<td>.27*</td>
<td>.55*</td>
<td>.99*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Incivility</td>
<td>--</td>
<td>.95</td>
<td>.88*</td>
<td>-.12*</td>
<td>.46*</td>
<td>.22*</td>
<td>.57*</td>
<td>.91*</td>
<td>.90*</td>
<td></td>
</tr>
<tr>
<td>9. ECI</td>
<td>--</td>
<td>1.04</td>
<td>.90*</td>
<td>-.09*</td>
<td>.51*</td>
<td>.26*</td>
<td>.58*</td>
<td>.94*</td>
<td>.95*</td>
<td>.93*</td>
</tr>
</tbody>
</table>

Notes: The means of latent variables in cross-sectional data are zero.
PCI = Perceived Cyber Incivility.
Structural, Social, Challenge, and Hindrance refer to the four job crafting dimensions.
CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
* p < .05
### Table 8
**Fit Statistics and Comparisons of All Expected and Competing Measurement Models**

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$ (df)</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>$\Delta\chi^2$ ($\Delta$df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Cyber Incivility (PCI)</td>
<td>617.68*** (77)</td>
<td>.938</td>
<td>.927</td>
<td>.105</td>
<td>.043</td>
<td></td>
</tr>
<tr>
<td>Engaged Cyber Incivility (ECI)</td>
<td>515.56*** (77)</td>
<td>.955</td>
<td>.947</td>
<td>.094</td>
<td>.031</td>
<td></td>
</tr>
<tr>
<td>Engaged Incivility</td>
<td>104.47*** (14)</td>
<td>.974</td>
<td>.961</td>
<td>.10</td>
<td>.027</td>
<td></td>
</tr>
<tr>
<td>PCI vs. ECI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCI and ECI 1-Factor</td>
<td>3042.93*** (350)</td>
<td>.865</td>
<td>.855</td>
<td>.109</td>
<td>.051</td>
<td>-1144.11*** (1)</td>
</tr>
<tr>
<td>PCI and ECI 2-Factor</td>
<td>1898.82*** (349)</td>
<td>.923</td>
<td>.916</td>
<td>.083</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td><strong>CWB-C: 1-Factor vs. 2-Factor</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CWB-C 1 Factor</td>
<td>1908.92*** (405)</td>
<td>.946</td>
<td>.942</td>
<td>.076</td>
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</tr>
<tr>
<td>CWB-C 2-Factor</td>
<td>1798.31*** (404)</td>
<td>.950</td>
<td>.946</td>
<td>.073</td>
<td>-110.60*** (1)</td>
<td></td>
</tr>
<tr>
<td><strong>All CWB Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All CWB Outcomes 1-Factor</td>
<td>6053.23*** (1224)</td>
<td>.892</td>
<td>.887</td>
<td>.078</td>
<td>.034</td>
<td></td>
</tr>
<tr>
<td>All CWB Outcomes 4-Factor</td>
<td>4458.05*** (1218)</td>
<td>.927</td>
<td>.924</td>
<td>.064</td>
<td>.027</td>
<td>-1595.18* (6)</td>
</tr>
<tr>
<td><strong>Job Crafting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Crafting 1-Factor</td>
<td>4334.03*** (189)</td>
<td>.499</td>
<td>.443</td>
<td>.185</td>
<td>.166</td>
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<tr>
<td>Job Crafting 2-Factor</td>
<td>4086.09*** (188)</td>
<td>.529</td>
<td>.473</td>
<td>.18</td>
<td>.166</td>
<td>-247.94*** (1)</td>
</tr>
<tr>
<td>(Resources vs. Demands)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Crafting 4-Factor</td>
<td>702.12*** (183)</td>
<td>.937</td>
<td>.928</td>
<td>.066</td>
<td>.042</td>
<td>-383.97*** (5)</td>
</tr>
</tbody>
</table>

**Notes.** $\chi^2$ = Chi-Square. CFI = Comparative Fit Index. TLI = Tucker Lewis Index. RMSEA = Root Mean Square Error of Approximation. SRMR = Standardized Root Mean Square Residual. All CWB Outcomes = Counterproductive Work Behaviors directed at the organization (CWB-O), Counterproductive Work Behaviors directed at other people (CWB-P), ECI, and Engaged Face-to-Face Incivility. Job Crafting = Increasing Social and Structural Resources, increasing Challenging Demands, and decreasing Hindering Demands. *p<.05, **p<.01, ***p<.001.
### Table 9
**Structural Model Path Coefficients Between PCI and CWB Outcomes with Controls (Hypothesis 1)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>CWB Outcomes</th>
<th></th>
<th></th>
<th>Engaged Incivility</th>
<th></th>
<th>ECI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CWB-O</td>
<td></td>
<td></td>
<td>CWB-P</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>B</td>
<td>SE</td>
<td>B</td>
<td>SE</td>
<td>B</td>
</tr>
<tr>
<td>PCI</td>
<td>.80***</td>
<td>.03</td>
<td>.76***</td>
<td>.03</td>
<td>.83***</td>
<td>.03</td>
<td>.74***</td>
</tr>
<tr>
<td>Sex</td>
<td>-.05</td>
<td>.05</td>
<td>-.07</td>
<td>.04</td>
<td>-.04</td>
<td>.04</td>
<td>-.06</td>
</tr>
<tr>
<td>Hours per Week</td>
<td>-.01</td>
<td>.00</td>
<td>-.01</td>
<td>.00</td>
<td>-.01</td>
<td>.00</td>
<td>-.00</td>
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<td>Electronic Communication</td>
<td>-.03</td>
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<td>-.02</td>
<td>.03</td>
<td>-.02</td>
<td>.02</td>
<td>-.01</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
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<tr>
<td>$R^2$</td>
<td>.75</td>
<td>.74</td>
<td>.82</td>
<td>.77</td>
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</tbody>
</table>

*Notes.* PCI = Perceived Cyber Incivility  
CWB-O = Counterproductive Work Behaviors directed at the organization.  
CWB-P = Counterproductive Work Behaviors directed at other people.  
ECI = Engaged Cyber Incivility  
*p<.05, **p<.01, ***p<.001.
Table 10
Fit Statistics of the 3-Step Procedure to Test for Latent Variable Interactions for All Interaction Models

<table>
<thead>
<tr>
<th>Source</th>
<th>Measurement Model (Step 1)</th>
<th>Structural Model (Step 2)</th>
<th>Interaction Model (Step 3)</th>
<th>$\chi^2$ (df)</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>AIC</th>
<th>BIC</th>
<th>$\Delta$AIC</th>
<th>$\Delta$BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Job Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td>7275.13*** (2340)</td>
<td>.911</td>
<td>.908</td>
<td>.057</td>
<td>.042</td>
<td>81242.43</td>
<td>82246.96</td>
<td>5.44</td>
<td>23.30</td>
</tr>
<tr>
<td>Social Job Resources</td>
<td>7241.22*** (2310)</td>
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<td></td>
<td></td>
<td>.911</td>
<td>.907</td>
<td>.058</td>
<td>.042</td>
<td>81247.86</td>
<td>82270.26</td>
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<tr>
<td>Structural Job Resources</td>
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<td></td>
<td></td>
<td>.910</td>
<td>.906</td>
<td>.056</td>
<td>.042</td>
<td>89485.36</td>
<td>90561.33</td>
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<tr>
<td>Structural Job Resources</td>
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<td></td>
<td></td>
<td>.910</td>
<td>.906</td>
<td>.056</td>
<td>.042</td>
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<td>90338.23</td>
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<td>Hindering Job Demands</td>
<td>7824.11*** (2616)</td>
<td></td>
<td></td>
<td></td>
<td>.910</td>
<td>.907</td>
<td>.056</td>
<td>.042</td>
<td>88818.26</td>
<td>89894.23</td>
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<td></td>
</tr>
<tr>
<td>Hindering Job Demands</td>
<td>7790.31*** (2616)</td>
<td></td>
<td></td>
<td></td>
<td>.910</td>
<td>.907</td>
<td>.056</td>
<td>.042</td>
<td>88800.91</td>
<td>89894.74</td>
<td>-17.35</td>
<td>.51</td>
</tr>
<tr>
<td>Challenging Job Demands</td>
<td>8010.37*** (2689)</td>
<td></td>
<td></td>
<td></td>
<td>.909</td>
<td>.906</td>
<td>.056</td>
<td>.042</td>
<td>91449.92</td>
<td>92539.28</td>
<td>-203.43</td>
<td>-185.57</td>
</tr>
<tr>
<td>Challenging Job Demands</td>
<td>7983.15*** (2667)</td>
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<td></td>
<td></td>
<td>.909</td>
<td>.905</td>
<td>.056</td>
<td>.042</td>
<td>91246.49</td>
<td>92353.71</td>
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<tr>
<td></td>
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<td>Interaction Model (Step 3)</td>
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<td>.909</td>
<td>.906</td>
<td>.056</td>
<td>.042</td>
<td>89839.55</td>
<td>90915.51</td>
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<td>.909</td>
<td>.906</td>
<td>.056</td>
<td>.044</td>
<td>89735.77</td>
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<td>-85.92</td>
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</tbody>
</table>

Note. $\chi^2$ = Chi-Square. CFI = Comparative Fit Index. TLI = Tucker Lewis Index. RMSEA = Root Mean Square Error of Approximation. SRMR = Standardized Root Mean Square Residual.
AIC = Akaike Information Criterion.
BIC = Bayesian Information Criterion.
$\Delta$AIC and $\Delta$BIC are calculated by subtracting the AIC and BIC of Step 2 from the AIC and BIC of Step 3, respectively.
*p<.05, **p<.01, ***p<.001.
Table 11
Path Coefficients of the Structural Model with the PCI by Source Interaction with Controls (Hypotheses 2)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>CWB-O</th>
<th></th>
<th>CWB-P</th>
<th></th>
<th>Engaged Incivility</th>
<th></th>
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</table>

$R^2$                  | .75     | .74  | .77     | .82  |
$\Delta R^2$ from Step 2| .00     | .00  | .00     | .00  |

Notes. PCI = Perceived Cyber Incivility  
CWB-O = Counterproductive Work Behaviors directed at the organization.  
CWB-P = Counterproductive Work Behaviors directed at other people.  
ECI = Engaged Cyber Incivility  
Source: 0 = Co-Worker, 1 = Supervisor  
*p<.05, **p<.01, ***p<.001.
Table 12
Path Coefficients of the Structural Model with the PCI by Increasing Social Resources Interaction with Controls (Hypothesis 4a)

<table>
<thead>
<tr>
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</table>

|         | CWB-P  |         |         |         |         |         |         |
|         | B      | SE      | B       | SE      | B       | SE      |         |
| PCI     | .54*** | .03     | .50***  | .03     | .58***  | .03     | .61***  |
| Increasing Social Resources     | .25*** | .03     | .27***  | .03     | .14***  | .03     | .23***  |
| PCI x Social Resources           | .35*** | .03     | .34***  | .03     | .23***  | .02     | .29***  |
| Sex                             | -.01   | .04     | -.03    | .03     | -.04    | .04     | 0.01    |
| Hours per Week                   | -.01** | .00     | -.01**  | .00     | -.01    | .00     | -.01**  |
| Electronic Communication         | -.03   | .02     | -.03    | .02     | -.02    | .02     | -.02    |
| Tenure                          | .00    | .00     | .00     | .00     | .00     | .00     | .00     |

|         | Engaged Incivility |         |         |         |         |         |         |
|         | B      | SE      | B       | SE      | B       | SE      |         |
| PCI     | .54*** | .03     | .50***  | .03     | .58***  | .03     | .61***  |
| Increasing Social Resources     | .25*** | .03     | .27***  | .03     | .14***  | .03     | .23***  |
| PCI x Social Resources           | .35*** | .03     | .34***  | .03     | .23***  | .02     | .29***  |
| Sex                             | -.01   | .04     | -.03    | .03     | -.04    | .04     | 0.01    |
| Hours per Week                   | -.01** | .00     | -.01**  | .00     | -.01    | .00     | -.01**  |
| Electronic Communication         | -.03   | .02     | -.03    | .02     | -.02    | .02     | -.02    |
| Tenure                          | .00    | .00     | .00     | .00     | .00     | .00     | .00     |

|         | ECI     |         |         |         |         |         |         |
|         | B      | SE      | B       | SE      | B       | SE      |         |
| PCI     | .54*** | .03     | .50***  | .03     | .58***  | .03     | .61***  |
| Increasing Social Resources     | .25*** | .03     | .27***  | .03     | .14***  | .03     | .23***  |
| PCI x Social Resources           | .35*** | .03     | .34***  | .03     | .23***  | .02     | .29***  |
| Sex                             | -.01   | .04     | -.03    | .03     | -.04    | .04     | 0.01    |
| Hours per Week                   | -.01** | .00     | -.01**  | .00     | -.01    | .00     | -.01**  |
| Electronic Communication         | -.03   | .02     | -.03    | .02     | -.02    | .02     | -.02    |
| Tenure                          | .00    | .00     | .00     | .00     | .00     | .00     | .00     |

Notes. PCI = Perceived Cyber Incivility
CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
*p<.05, **p<.01, ***p<.001.
Table 13
*Simple Slopes of the Moderators with Significant Interactions at One Standard Deviation Above and Below the Mean of the Respective Moderator*

<table>
<thead>
<tr>
<th>Job Crafting Moderator</th>
<th>CWB Outcomes</th>
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<td>.74***</td>
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*Notes. PCI = Perceived Cyber Incivility*

CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
*p<.05, **p<.01, ***p<.001.*
Table 14
Path Coefficients of the Structural Model with the PCI by Increasing Structural Resources Interaction with Controls (Hypothesis 4b)

<table>
<thead>
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<th>Predictor</th>
<th>CWB-O</th>
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</table>

| $R^2$                                  | .76   | .75            | .77   | .82            |
| $\Delta R^2$ from Step 2               | .01   | .01            | .00   | .00            |

Notes. PCI = Perceived Cyber Incivility
CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
*p<.05, **p<.01, ***p<.001.
Table 15  
*Path Coefficients of the Structural Model with the PCI by Decreasing Hindering Demands Interaction with Controls (Hypothesis 6)*

<table>
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<th>Predictor</th>
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| R²                               | .82          | .82       | .80       | .88              |
| ΔR² from Step 2                  | .06          | .07       | .01       | .05              |

*Notes. PCI = Perceived Cyber Incivility*  
*CWB-O = Counterproductive Work Behaviors directed at the organization.*  
*CWB-P = Counterproductive Work Behaviors directed at other people.*  
*ECI = Engaged Cyber Incivility*  
*p<.05, **p<.01, ***p<.001.*
Table 16
Path Coefficients of the Structural Model with the PCI by Increasing Challenging Demands Interaction with Controls (Hypothesis 8)

<table>
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<td>.01</td>
<td>.03</td>
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</table>

Notes. PCI = Perceived Cyber Incivility
CWB-O = Counterproductive Work Behaviors directed at the organization.
CWB-P = Counterproductive Work Behaviors directed at other people.
ECI = Engaged Cyber Incivility
*p<.05, **p<.01, ***p<.001.
Figure 1. Hypothesized moderated mediation model.
Figure 2. Modified hypothesized moderation model. Dotted lines indicate paths that could no longer be tested.
Figure 3. Moderating effects of increasing social resources on the relation between PCI and various CWBs. Low and High Social represent values of the job crafting to increase social resources moderator at one standard deviation above and below the mean, respectively.
Figure 4. Moderating effect of increasing structural resources on the relation between PCI and CWB-O. Low and High Structural represent values of the job crafting to increase structural resources moderator at one standard deviation above and below the mean, respectively.
Figure 5. Moderating effects of decreasing hindering demands on the relation between PCI and various CWBs. Low and High Hindering represent values of the job crafting to decrease hindering demands moderator at one standard deviation above and below the mean, respectively.
Figure 6. Moderating effects of increasing challenging demands on the relation between PCI and various CWBs. Low and High Challenge represent values of the job crafting to increase challenging demands moderator at one standard deviation above and below the mean, respectively.
APPENDICES
Appendix A

Mini-IPIP (Donnellan et al., 2006) from the IPIP representation of the Big-Five Lexical Markers (Goldberg, 1992).

5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree)

Please indicate the extent to which you agree to the following statements.

Conscientiousness

1. I get chores done right away.
2. I often forget to put things back in their proper place (-).
3. I like order.
4. I make a mess of things (-).

Agreeableness

1. I sympathize with others’ feelings.
2. I am not interested in other people’s problems (-).
3. I feel others’ emotions.
4. I am not really interested in others (-).

Neuroticism

1. I have frequent mood swings.
2. I am relaxed most of the time (-).
3. I get upset easily.
4. I seldom feel blue (-).

Openness to Experiences

1. I have a vivid imagination.
2. I am not interested in abstract ideas (-).
3. I have difficulty understanding abstract ideas (-).
4. I do not have a good imagination (-).

Extraversion

1. I am the life of the party.
2. I don’t talk a lot (-).
3. I talk to a lot of different people at parties.
4. I keep in the background (-).
Appendix B

Cyber Incivility Source

Looking at the following list of behaviors, from who do you tend to experience these types of behaviors from most, your supervisor(s) or co-worker(s)?

- Supervisor(s)
- Co-worker(s)

1. Said something hurtful to you through email.
2. Used emails to say negative things about you that he/she would not say to you face-to-face.
3. Made demeaning or derogatory remarks about you through email.
4. Inserted sarcastic or mean comments between paragraphs in emails.
5. Put you down or was condescending to you in some way through email.
7. Use CAPS to shout at you through email.
8. Not replying to your email at all.
9. Ignored a request (e.g., schedule a meeting) that you made through email.
10. Replied to your emails but did not answers your queries.
11. Used emails for time-sensitive messages (e.g., canceling or scheduling a meeting on short notice).
12. Paid little attention to a statement made by you through email or showed little interest in your opinion.
13. Not acknowledging that he/she has received your email even when you sent a “request receipt” function.
14. Used email for discussions that would require face-to-face dialogue.

Cyber Incivility Measure (Lim & Teo, 2009)

5-point scale ranging from 1 (Not at all) to 5 (All the time).

Please indicate the extent to which you have experienced each of the following behaviors from your (supervisor(s) or co-worker(s) depending on their response to the previous question) during the past year.

1. Said something hurtful to you through email.
2. Used emails to say negative things about you that he/she would not say to you face-to-face.
3. Made demeaning or derogatory remarks about you through email.
4. Inserted sarcastic or mean comments between paragraphs in emails.
5. Put you down or was condescending to you in some way through email.
7. Use CAPS to shout at you through email.
8. Not replying to your email at all.
9. Ignored a request (e.g., schedule a meeting) that you made through email.
10. Replied to your emails but did not answers your queries.
11. Used emails for time-sensitive messages (e.g., canceling or scheduling a meeting on short notice).
12. Paid little attention to a statement made by you through email or showed little interest in your opinion.
13. Not acknowledging that he/she has received your email even when you sent a “request receipt” function.
14. Used email for discussions that would require face-to-face dialogue.
Appendix C

Face-to-Face Workplace Incivility Scale (WIS; Cortina et al., 2001).

5-point scale ranging from 1 (Never) to 5 (Many times).

How often have you exhibited the following behaviors in the past year to someone at work?

1. Put down others or was condescending to them in some way.
2. Paid little attention to a statement made by someone or showed little interest in their opinion.
3. Made demeaning, rude, or derogatory remarks about someone.
4. Addressed someone in unprofessional terms either privately or publicly.
5. Ignored or excluded someone from professional camaraderie (e.g. social conversation).
6. Doubted someone’s judgement in a matter over which they have responsibility.
7. Made unwanted attempts to draw someone into a discussion of personal matters.
Appendix D

Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2005)

5-point scale ranging from 1 (Never) to 5 (Every day)

Please indicate the extent to which you have engaged in the following behaviors during the past year.

CWB-O

1. Been nasty or rude to a client or customer
2. Purposely did your work incorrectly.
3. Purposely worked slowly when things needed to get done.
4. Purposely failed to follow instructions.
5. Purposely wasted your employer’s materials/supplies.
6. Purposely damaged a piece of equipment or property.
7. Purposely dirtyed or littered your place of work.
8. Stolen something belonging to your employer.
9. Took supplies or tools home without permission.
10. Put in to be paid for more hours than you worked.
11. Took money from your employer without permission.
12. Came to work late without permission.
13. Stayed home from work and said you were sick when you weren’t.
14. Take a longer break than you were allowed to take.
15. Left work earlier than you were allowed to.

CWB-P

1. Made an obscene gesture (the finger) to someone at work.
2. Threatened someone at work with violence.
3. Threatened someone at work, but not physically.
4. Said something obscene to someone at work to make them feel bad.
5. Did something to make someone at work look bad.
6. Played a mean prank to embarrass someone at work.
7. Looked at someone at work’s private mail/property without permission.
8. Hit or pushed someone at work.
9. Insulted or made fun of someone at work.
10. Started or continued a damaging or harmful rumor at work.
11. Insulted someone about their job performance.
12. Blamed someone at work for an error that you made.
13. Started an argument with someone at work.
14. Verbally abused someone at work.
15. Stole something belonging to someone at work.
Appendix E

Job Crafting Scale (JCS; Tims et al., 2012)

5-point scale ranging from 1 (Never) to 5 (Very often)

Please rate the extent to which you engage in the following behaviors in your current place of employment.

**Increasing Structural Job Resources**

1. I try to develop my capabilities.
2. I try to develop myself professionally.
3. I try to learn new things at work.
4. I make sure that I use my capacities to the fullest.
5. I decide on my own how I do things.

**Increasing Social Job Resources**

1. I ask my supervisor to coach me.
2. I ask whether my supervisor is satisfied with my work.
3. I look to my supervisor for inspiration.
4. I ask others for feedback on my job performance.
5. I ask colleagues for advice.

**Increasing Challenging Job Demands**

1. When an interesting project comes along, I offer myself proactively as project co-worker.
2. If there are new developments, I am one of the first to learn about them and try them out.
3. When there is not much to do at work, I see it as a chance to start new projects.
4. I regularly take on extra tasks even though I do not receive extra salary for them.
5. I try to make my work more challenging by examining the underlying relationships between aspects of my job.

**Decreasing Hindering Job Demands**

1. I make sure that my work is mentally less intense.
2. I try to ensure that my work is emotionally less intense.
3. I manage my work so that I try to minimize contact with people whose problems affect me emotionally.
4. I organize my work so as to minimize contact with people whose expectations are unrealistic.
5. I try to ensure that I do not have to make many difficult decisions at work.
6. I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once.
Appendix F

Demographic and Control Variables

1. What is your age in years?

2. Which best describes your current employment situation?
   - Full-time (at least 35 hours per week)
   - Part time (less than 35 hours per week)
   - Homemaker

3. How often do you use electronic communication (e.g., email, texting, online chat) to communicate with your supervisor(s) and/or co-workers for work?
   - Several times per work day
   - At least once per work day
   - Less than once per work day
   - At least once per week
   - Less than once per week

4. What is your gender?
   - Male
   - Female

5. Of the industries listed below, which one would you say your current job belongs to?
   - Business and Financial Operations
   - Computer and mathematical
   - Architecture and Engineering
   - Life, Physical, and Social Science
   - Community and Social Service
   - Legal
   - Education, Training, and Library
   - Arts, Design, Entertainment, Sports, and Media
   - Healthcare Practitioners and Technical
   - Healthcare Support
   - Protective Service
   - Food Preparation and Serving Related Occupations
   - Building and Grounds Cleaning and Maintenance
   - Personal Care and Service
   - Sales and Related Occupations
   - Office and Administrative Support
   - Farming, Fishing, and Forestry
   - Construction and Extraction
   - Installation, Maintenance, and Repair
   - Production
   - Transportation and Material Moving
• Military Specific Occupations
• Other (Please Specify)

6. How long have you been employed at your current job (in years and months)?
   • Years_______
   • Months______

7. In an average working week, how many hours do you typically work?
Appendix G

Individual Differences in Perceptions of Cyber Incivility: Mitigating the Negative Effects of Incivility with Job Crafting

by

Andrew Alexander Weedfall

A dissertation proposal submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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Individual Differences in Perceptions of Cyber Incivility: Mitigating the Negative Effects of Incivility with Job Crafting

Employees have reported frequent experiences of uncivil behaviors in their workplaces (Pearson & Porath, 2005; Porath & Pearson, 2013), and researchers have linked these experiences to a wide array of negative outcomes (Schilpzand, De Pater, & Erez, 2016). Researchers refer to these behaviors as acts of workplace incivility, and describe incivility as a set of deviant behaviors that violate workplace norms for mutual respect but are low in intensity and have an ambiguous intent to harm the target of these behaviors (Andersson & Pearson, 1999). Examples of these behaviors include speaking to others disrespectfully or in a demeaning manner, ignoring others, interrupting others during conversation, excluding co-workers from meetings or from going out to lunch, and other forms of discourteous behavior (Pearson, Andersson, & Porath, 2000; Penney & Spector, 2005).

Thus, by definition, workplace incivility is distinct from other types of deviant behaviors that researchers often classify as counterproductive work behaviors (CWB). For researchers to classify a behavior as a CWB, the instigator must have an intent to do harm to the target, be it another person or the organization itself (Penney & Spector, 2002). However, with incivility, the intent to harm is ambiguous and, due to its low-intensity nature, instigators can rightfully claim that harm was unintentional or that targets misinterpreted the behavior (Kunkel & Davidson, 2014). Although some overlap does exist between CWB and incivility within the spectrum of deviant behaviors, the low-intensity nature of incivility further distinguishes it from CWB. For example, to make negative remarks about a co-worker may be both a CWB and a form of incivility, whereas other behaviors, like a failure to respond to an email or to greet a co-worker in the morning are uncivil behaviors but not CWBs (Penney & Spector, 2005).
In most cases, the focal point of these two behavioral classifications also differs. When assessing incivility, the focus is often not on the actual uncivil behaviors of the perpetrator, but instead on the targets and their perceptions of said uncivil behaviors. This is because unlike CWBs, which researchers classify as strains or responses to a stressor, researchers classify incivility as a stressor or an event that requires some type of response. Therefore, when assessing CWBs it is sensible to assess how often perpetrators engage in CWBs in response to a stressor. In contrast, when assessing incivility, the focus of the assessment is often on the victims’ perception of the stressor and whether or not they perceive it to be incivility (Lim & Chin, 2006; Penney & Spector, 2005). Furthermore, because it is not required that the perpetrator have intent to harm for a target to perceive a behavior as uncivil, one person may perceive a behavior as uncivil while another does not. This further emphasizes the importance of target perceptions when assessing incivility. Additionally, it suggests that there may be individual differences that affect whether certain people perceive certain behaviors to be uncivil, while other people do not (Sliter, Withrow, & Jex, 2014).

The present research aims to study these potential individual differences in perceptions of incivility. Specifically, this research will assess how certain personality traits influence perceptions of cyber incivility. Additionally, this research will assess some of the potential negative outcomes of these cyber incivility perceptions and whether job crafting can help to mitigate the negative outcomes that arise from perceiving cyber incivility.

**Incivility and Cyber Incivility**

In recent incivility literature, cyber incivility, or incivility that occurs through electronic communication such as email and text messaging has gained researcher interest. Cyber incivility shares many of the same characteristics as face-to-face incivility in that it is a violation of
workplace norms of mutual respect and has an ambiguous intent to cause harm (Lim & Teo, 2009). However, this rude and discourteous electronic communication lacks some important qualities that face-to-face interactions have. Notably, instant feedback and nonverbal cues are not available through email and text communications. As a result, individuals may be more likely to perceive incivility through these means of communication because the intentions of harm may be even more ambiguous in these exchanges compared to face-to-face interactions (Giumetti, Saunders, Brunette, DiFrancesco, & Graham, 2016). In contrast, due to the heightened ambiguity of intent to harm, targets may experience fewer negative outcomes as a result, because they are able to find alternative explanations for the uncivil behavior (Miner et al., 2018). Nonetheless, researchers posit that instigators may engage in more uncivil behaviors through online communication because they feel less constrained and freer to express themselves in ways that they may refrain from during face-to-face interactions (Giumetti et al., 2016).

Uncivil behaviors may look similar regardless of whether they occur online or through face-to-face communication. However, if individuals are more likely to engage in uncivil behaviors or perceive interactions as uncivil when they occur through electronic communication systems compared to in person, it is important to understand the antecedents and outcomes of such cyber interactions.

By and large, it should be no surprise that these low-intensity and easily defendable acts of incivility occur often within the workplace. Researchers contend that as many as 98% of workers have experienced face-to-face incivility in the workplace at least once, while 20%-50% of them have experienced these behaviors at least once per week (Pearson & Porath, 2005; Porath & Pearson, 2013). There is less existing research on the frequency of cyber incivility experiences among employees, but one study has shown that 91% of employees included in the
study had experienced cyber incivility from their supervisor at work (Lim & Chin, 2006).
Although both forms of incivility tend to occur frequently in the workplace, the frequency in
which people experience face-to-face or cyber incivility may vary from person to person. In
other words, there may be individual differences in the way people perceive certain scenarios
(Sliter et al., 2014). For instance, one individual may feel that they are being ignored by a
colleague who has not yet responded to an email (i.e., cyber incivility). In contrast, another
individual may simply assume that the colleague has not yet seen the email or is busy dealing
with some more pressing concern. Researchers have aimed to identify individual differences that
might factor into who is most likely to experience incivility. Among the most commonly
researched are personality differences.

**Personality and Incivility**

Researchers often describe personality through the five-factor model of personality,
otherwise known as The Big Five. This framework summarizes personality into five distinct
factors, or personality traits: openness to experience, conscientiousness, extraversion,
agreeableness, and neuroticism (McCrae & John, 1992). Openness to experience involves being
open minded, intelligent, imaginative, and curious. Conscientiousness is associated with being
dependable, achievement oriented, careful, organized, and responsible. Individuals who are high
in extraversion tend to be talkative, social, and are often ambitious. Agreeableness refers to
being friendly, flexible, courteous, and tolerant or compliant. Finally, neuroticism, or emotional
instability, is related to being emotional, anxious and depressed, and is associated with general
negative affectivity (Barrick & Mount, 1991; Costa & McCrae, 1990). Researchers have posited
that these Big Five personality traits may influence the extent to which individuals perceive
certain behaviors of others as uncivil.
Milam, Spitzmueller, and Penney (2009) were among the first to assess how incivility was associated with personality. Specifically, they assessed how agreeableness, neuroticism, and extraversion were linked to perceptions of incivility. They found that individuals who were low in agreeableness or high in neuroticism were more likely to report that they had experienced incivility in the workplace. Other researchers have also found that all Big Five traits except extraversion were correlated with experiences of incivility (Sliter et al., 2014; Taylor & Kluemper, 2012) and that individuals high in neuroticism were more likely to rate the severity of uncivil incidents higher on average than individuals who were low in neuroticism (Beattie & Griffin, 2014). Sliter et al., (2014) contended that these personality traits influenced perceptions of incivility in the same way that personality affects the appraisal process of stress.

According to the transactional theory of stress (Lazarus & Folkman, 1987), when people experience potentially stressful demands, they undergo two types of appraisals regarding what that stressor means to them personally, namely, primary and secondary appraisal. Primary appraisal involves assessing what kind of a demand one is experiencing. Specifically, demands can be a threat in which one may anticipate future potential harm or a challenge in which one may anticipate that the experience may provide potential for mastery. For example, during potentially uncivil interpersonal interactions, it is through the primary appraisal process that individuals perceive whether the interaction is a threatening stressor (e.g., incivility) or a challenge (e.g., relationship building opportunity). In contrast, secondary appraisal is the cognitive process that involves evaluating what can be done about the stressor. This appraisal involves assessing the resources that are available to cope with and improve the situation (Lazarus & Folkman, 1987; Sliter et al., 2014). Therefore, primary appraisal is relevant to the perceptions and antecedents of incivility, whereas secondary appraisal is relevant to the resulting
outcomes of incivility once an individual has perceived the occurrence of incivility. Research from the personality, stress, and CWB literatures suggest that personality may be a driver in both of these appraisals.

**Linking Personality, with Perceptions and Outcomes of Cyber Incivility**

Because individuals’ dispositions affect the way that they appraise their stressors, these dispositions can influence the extent to which they perceive incivility and thus, the subsequent outcomes of incivility. However, some personality traits are more influential in this process than others.

**Neuroticism**

Neuroticism is among the most consistent personality predictors of stress appraisal and incivility perceptions. Costa and McCrae (1990) refer to neuroticism as a predisposition to experience distress, which influences how individuals perceive potential stressors that they experience. Several stress researchers have found positive associations between highly neurotic individuals and stress levels or stress appraisal (e.g., Ebstrup, Eplov, Pisinger, & Jørgensen, 2011; Gallagher, 1990; Kaiseler, Polman, & Nicholls 2012; Penley & Tomaka, 2002; Vollrath, 2000). This predisposition to stress may be especially true for interpersonal stressors (e.g., incivility). Gunthert, Cohen, and Armeli (1999) showed that in a daily diary study, individuals who scored high on neuroticism tended to more frequently rate interpersonal stressors as their worst problem of the day than individuals low in neuroticism. Because highly neurotic individuals tend to be especially sensitive to interpersonal stressors, it is unsurprising that they would frequently perceive incivility or cyber incivility in ambiguous interactions. Although all forms of incivility have an ambiguous intent to harm, the lack of nonverbal cues and feedback in cyber incivility may even intensify the ambiguity of intention to harm (Giumetti et al., 2016).
Therefore, the present research expects that individuals high in neuroticism will more frequently perceive and interpret these ambiguous cyber behaviors as uncivil compared to individuals low in neuroticism.

**Conscientiousness**

After neuroticism, conscientiousness is perhaps the next Big Five trait that is most consistently associated with stress and incivility. However, the direction in which it relates to these stress related variables is relatively inconsistent. For example, some researchers have suggested that, compared to individuals who are low in conscientiousness, those who are high in conscientiousness tend to experience fewer interpersonal stressors over their lives because they are able to develop better relationships and engage in fewer altercations (Hogan & Ones, 1997). Accordingly, studies have shown that conscientiousness was negatively associated with perceived stress appraisal (e.g., Ebstrup et al., 2011; Penley & Tomaka, 2002; Watson & Hubbard, 1996). In contrast, Gartland, O’Conner, and Lawton (2012) found that individuals high in conscientiousness tended to appraise more stress than individuals low in conscientiousness. Similar inconsistencies exist within the incivility literature as well. Sliter and colleagues (2014) found evidence to support their assertion that conscientious individuals would be more sensitive to breaches of interpersonal norms due to their high attention to detail compared to individuals who were more easy going and less organized. Yet, Taylor and Kluemper (2012) found a negative correlation between conscientious individuals and their perceptions of incivility. Nonetheless, there appears to be more evidence that suggests conscientious individuals are motivated to build strong relationships, avoid altercations, and have positive affective expectations for the situations that they encounter (Besser & Shackelford,
Thus, in the present study I expect that highly conscientious individuals will perceive less cyber incivility than individuals who are low in conscientiousness.

Agreeableness

Researchers have posited that individual differences in agreeableness may be the most salient Big Five trait with regard to interpersonal relationships, and specifically during interpersonal conflict. In these cases, individuals who are high in agreeableness may have a propensity to perceive potential interpersonal conflict more constructively than individuals who are low in agreeableness because agreeable individuals have a desire to sustain positive relationships with others. These researchers found empirical support for their claim (Graziano, Jensen-Campbell, & Hair, 1996), and research in the stress literature has also shown that highly agreeable individuals appraise their stressors as less intense than individuals who are low in agreeableness (Kaiseler et al., 2012). However, other research has reported that there is no significant association between agreeableness and stress appraisal (e.g., Penley & Tomaka, 2002; Vollrath, 2000). Nonetheless, it seems that unlike conscientiousness, when researchers find significant associations between agreeableness and stress appraisal, they are always in a negative direction. Furthermore, both Milam et al., (2009) and Sliter et al., (2014) found that individuals high in agreeableness perceived less incivility than individuals low in agreeableness. With this in mind, as Graziano et al., (1996) suggested, individual differences in the agreeableness trait may be most important in contexts of interpersonal stressors as opposed to other stressors. Thus, in line with previous incivility research, in the present study I expect that individuals who are high in agreeableness will perceive less cyber incivility than individuals who are low in agreeableness. In fact, with the potentially higher ambiguity of cyber interactions compared to face-to-face interactions (Giumetti et al., 2016), highly agreeable individuals may have even less
reason to perceive such cyber interactions negatively as they might in instances of potential face-to-face incivility.

**Openness to Experience**

By definition, individuals who are high in openness tend to be more open minded than those who are low in openness (Barrick & Mount, 1991). Thus, these individuals may be more likely or willing to give potential incivility perpetrators the benefit of the doubt (Sliter et al., 2014). Stress appraisal research has shown that individuals who are highly open to experiences appraise and experience fewer threatening stressors compared to their low openness counterparts (Penley & Tomaka, 2002; Schneider, Rench, Lyons, & Riffle, 2012). However, other researchers have shown that there is no relation between the openness trait and intensity of stress (Kaiseler et al., 2012) or frequency of interpersonal stressors (Vollrath, 2000). The one study that has assessed how openness to experience relates to perceptions of incivility found that individuals who score high in openness tend to perceive fewer uncivil interactions than individuals who score low in openness (Sliter et al., 2014). However, this association tends to be less supported by the literature than associations involving the three aforementioned personality traits. Thus, I will not make any predictions with regard to openness to experience, but will include it in the study for exploratory purposes.

**Extraversion**

In contrast to neuroticism, the extraversion trait is perhaps the least consistent predictor of threatening stressor appraisal or perceptions of incivility. Although some research has concluded that extraverts perceive and experience fewer stressors than introverts (Penley & Tomaka, 2002; Vollrath, 2000), other research has shown no relation between stress and the personality trait (Kaiseler et al., 2012; Schneider et al., 2012). In line with the claim that
extraverted individuals have more positive experiences than introverted individuals, incivility researchers hypothesized that extraversion would be negatively associated with perceptions of incivility. However, contrary to their hypotheses, these researchers found no relation between extraversion and perceptions of incivility (Milam et al., 2009; Sliter et al., 2014). Perhaps the best explanation for such inconsistencies stems from the research of Gallagher (1990). Gallagher found that with regard to primary appraisal, individuals high in extraversion tended to make more challenge appraisals than introverted individuals; however, there was no association between extraversion and threat appraisals. In other words, it seemed that extraverts were especially sensitive toward positive or rewarding experiences, while having less concern with negative experiences. Therefore, because the present research is exclusively focused on negative appraisals of ambiguous scenarios (i.e., perceived cyber incivility), I will exclude extraversion from the study.

**Outcomes of Incivility**

Given that certain personality traits may influence the appraisal process and thus perceptions of incivility, these traits may also have an indirect association with several negative outcomes. This is because despite the mild nature of uncivil behaviors, research has shown that through high frequencies of occurrence both face-to-face and cyber incivility are associated with a wide range of negative outcomes. These outcomes can impact both the personal well-being of individual employees as well as the organizations in which they work. For instance, researchers have concluded that the frequency of encounters with face-to-face workplace incivility is positively associated with psychological distress and negatively associated with organizational commitment and job satisfaction (Cortina, Magley, Williams, & Langhout, 2001; Spence Laschinger, Leiter, Day & Gilin, 2009; Taylor, Bedeian, & Kluemper, 2012). Additionally,
qualitative research has shown that being a target of face-to-face incivility often results in experiencing feelings of negative affectivity and isolation after the encounter (Pearson, Andersson, & Wegner, 2001). Similarly, cyber incivility researchers have found that uncivil cyber behaviors are linked to some of the same negative outcomes as face-to-face incivility with regard to personal well-being. For example, researchers have found that cyber incivility is negatively associated with organizational commitment and job satisfaction, and positively associated with burnout and affective and physical distress (Giumetti, McKibben, Hatfield, Schroeder, & Kowalski, 2012; Giumetti et al., 2016, Lim & Teo, 2009; Park, Fritz, & Jex, 2015). Furthermore, Giumetti et al., (2013) showed participants who experienced uncivil comments via email tended to experience more negative affect than participants who received supportive email communications.

Studies have shown that face-to-face and cyber incivility can have some severe consequences on organizational outputs as well. Research has shown that uncivil face-to-face encounters at work are positively associated with turnover intentions, and negatively associated with citizenship performance and work engagement which then negatively affects task performance (Chen et al., 2013; Cortina et al., 2001; Spence Laschinger et al., 2009; Pearson et al., 2001; Taylor et al., 2012). Likewise, cyber incivility has shown negative and positive relations with job performance and turnover intentions, respectively (Giumetti et al., 2012; Giumetti et al., 2016). Thus, there are many similarities with regard to the negative outcomes of face-to-face and cyber incivility. However, one area of research that seems to be lacking in the cyber incivility literature, which may be especially relevant to personality, is the connection between cyber incivility and other CWBs.
The relation between cyber incivility and CWBs is especially of interest because research has shown a link between face-to-face incivility in the workplace and CWBs (Mao, Chang, Johnson, & Sun, 2017; Penney & Spector, 2005). Specifically, incivility researchers have proposed that there may be a spiraling effect within which acts of incivility are likely to lead to reciprocated acts of incivility and spiral into more severe forms of CWBs, including aggression (Andersson and Pearson, 1999). To date, there are only a few studies to empirically support this spiraling effect (e.g., Bunk & Magley, 2013; Kim & Shapiro, 2008); but overall, there is little extant research on any behavioral responses to incivility (Miner et al., 2018). To fill this gap in the incivility literature on the association between incivility and CWB, the present study draws from the broader stress literature.

There are two frameworks that can explain the stressor to CWB relation. First, according to the job stress/emotion/CWB model, individuals may respond emotionally to the stressor by engaging in CWBs as a form of coping with the stressor (Fox, Spector, & Miles, 2001; Krischer, Penney, & Hunter, 2010; Spector & Fox, 2002). Alternatively, albeit not necessarily a mutually exclusive response to all stressors, individuals may have a more cognitive, as opposed to an emotional response to a particular stressor. Martinko, Gundlach, and Douglas (2002) explain that individuals may cognitively rationalize their engagement in CWBs as a result of a stressor they have experienced. With regard to cyber incivility, both of these frameworks or driving forces could apply. For example, a target of cyber incivility may engage in withdrawal from work or production deviance in order to free up resources to cope with the stressor. Likewise, cyber incivility targets may rationalize abusive or even aggressive behaviors toward instigators as a way of getting back at them. Nonetheless, apart from withdrawal behaviors (see Giumetti et al., 2012), there is little to no existing research that has assessed the association between cyber
incivility and CWBs. However, there is research on the association between personality and CWBs.

Researchers have proposed that personality may have direct and indirect effects on various CWBs (Cullen & Sackett, 2003). Some research has studied these direct effects. Specifically, researchers have tended to separately assess how the Big Five personality traits were associated with CWBs directed at other people (CWB-P) and CWBs that are directed at the organization (CWB-O) in which the perpetrator works. For example, Kozako, Safin, & Rahim, (2013) found that agreeableness had a negative association with both forms of CWB while neuroticism and openness to experience had a positive association with both forms of CWBs. Interestingly, in contrast to their hypothesis, conscientiousness was not significantly related to either form of CWB in this study. However, other research has found significant associations between conscientiousness and CWB-P, along with other associations between the Big Five personality traits and CWBs that are similar to the Kozako et al.’s findings (e.g., Bolton, Becker, & Barber, 2010; Mount, Ilies, & Johnson 2006). Meta-analytic research has attempted to summarize the relations between personality and CWBs. This research found that Big Five personality traits are among the most strongly correlated variables to both CWB-P and CWB-O. Specifically, the relationships between CWB and agreeableness, conscientiousness, and neuroticism were especially high (Berry, Ones, & Sackett, 2007). Notably, the Berry et al., (2007) meta-analysis showed a negative, albeit, weak relation between openness and both forms of CWB. This is contradictory to the aforementioned findings between openness and CWBs (e.g., Bolton et al., 2010; Kozako et al., 2013). These inconsistent findings on the relation between openness and CWB further support the inclusion of the openness to experiences trait for exploratory purposes only.
Thus, although some variation exists in the research, in general there appears to be a clear relation between some personality traits and CWB, namely agreeableness, conscientiousness, and neuroticism. Nonetheless, as Cullen and Sackett (2003) contend, although personality may have direct associations with CWBs in some cases, a more likely explanation is that personality may have an indirect effect on CWBs through attitudes, emotions, or perceptions of events. For example, personality may influence work aspects such as job satisfaction, which in turn influences the extent to which individuals engage in CWBs (Mount et al., 2006). The present research aims to address these associations, specifically through perceptions of cyber incivility and how those perceptions may result in targets’ engagement in various types of CWBs. Said differently, in this study I will assess the indirect effect that personality has on the engagement in CWB-Os, CWB-Ps, face-to-face incivility, and cyber incivility through perceptions of cyber incivility from others. The CWB-Os include behaviors that are often classified as sabotage, withdrawal, production deviance, and theft. In contrast, CWB-Ps typically refer to interpersonal conflicts that can range from severe physical aggression or threats of aggression to more minor infractions like incivility. Due to the conceptual overlap between CWB-P and incivility, in the present study CWB-P will only refer to the more severe behaviors of the continuum (e.g., aggression), while incivility and cyber incivility will be treated as their own separate categories. I anticipate that neuroticism will have a positive indirect effect on the engagement in these CWBs, whereas agreeableness and conscientiousness will have a negative indirect effect on these various CWBs. A full illustration of the hypothesized associations is displayed in Figure 1.

**Hypothesis 1:** Perceptions of cyber incivility will mediate the association between personality (i.e., agreeableness, conscientiousness, and neuroticism) and the engagement in CWBs, face-to-face incivility, and cyber incivility.
Research Question 1: Will perceptions of cyber incivility mediate the association between openness to experience and the engagement in CWBs, face-to-face incivility, and cyber incivility?

It is important to assess the engagement in CWBs in separate categories (e.g., CWB-O, CWB-P) for several reasons more fully presented below.

Cyber Incivility Source

Researchers have found that certain antecedents may relate to some types of CWBs differently than others. Perhaps the most relevant to the present study are the findings from Fox et al., (2001). These researchers found that organizational stressors such as job constraints and injustice had stronger associations with CWB-O than with CWB-P. In contrast, they found that interpersonal conflict had a stronger association with CWB-P than CWB-O. In the context of cyber incivility, it would seem that cyber incivility, a form of interpersonal conflict, would be more associated with CWB-P than with CWB-O. However, it is also important to make note of who the source of the cyber incivility is.

Although targets may perceive the uncivil cyber behaviors of a peer as forms of interpersonal conflict, targets may view uncivil cyber behaviors coming from their supervisors as forms of interactional injustice (Cortina et al., 2001; Penney & Spector, 2005). This is because individuals may perceive their supervisors as agents of the organization and they may view exchanges with their supervisors as formal organizational interactions. Thus, in these scenarios, the targets of cyber incivility may be more likely to engage in CWB-O than in CWB-P, because they feel that the uncivil behavior is essentially coming from the organization rather than an individual.
Additionally, in instances where supervisors are the instigators, power differentials can affect the type of CWBs that their targets engage in. Despite the fact that incivility targets may have more negative perceptions of uncivil behaviors that come from supervisors (Cortina & Magley, 2009), some research has shown that these targets are less likely to directly confront their uncivil supervisors compared to targets who experienced uncivil behaviors from less powerful instigators (Porath, Overbeak, & Pearson, 2008). These findings are also consistent with the literature on workplace revenge and retaliation. For example, Aquino, Trip, and Bies (2001) found that although being a victim of a workplace offense was positively associated with exacting revenge on the perpetrator, the relative status of the victim compared to the perpetrator moderated this relationship. In other words, victims were less likely to seek revenge against perpetrators when the perpetrators were of higher relative status within the organization than the victims themselves. This is likely because there are greater risks involved with retaliating against a supervisor than a co-worker. Thus, incivility targets may refrain from directly confronting their high-level instigators out of fear that these instigators could subsequently negatively influence the formal work outcomes of the target, such as reward systems and social connections (Aquino et al., 2001).

Targets of supervisor incivility may be less likely to engage in CWB-P; however, it remains unclear whether these targets will engage in CWB-O as an alternative. Although some research has separately assessed the relation between incivility and both forms of CWB (i.e., CWB-O and CWB-P), this research did not distinguish between the sources of the incivility (e.g., supervisor and co-worker; Penney & Spector, 2005). Furthermore, researchers have not yet tested these associations with instances of cyber incivility. Thus, I will assess the interaction
between perceptions of cyber incivility and the source of the cyber incivility on the engagement in CWBs. Specifically, hypothesis 2 and 3 state:

**Hypothesis 2:** The source of the cyber incivility (supervisor or co-worker) will moderate the relation between perceptions of cyber incivility and engagement in CWB-Ps (including incivility), such that when the source of the cyber incivility is a supervisor, the relation between perceptions of incivility and engagement in CWB-Ps (including incivility) will be weaker than if the source of the cyber incivility was a co-worker.

**Hypothesis 3:** The source of the cyber incivility (supervisor or co-worker) will moderate the indirect effect between personality and engagement in CWB-Ps (including incivility) through perceptions of incivility, such that when the source of the cyber incivility is a supervisor, the indirect effect of personality on engagement in CWB-Ps (including incivility) through perceptions of incivility will be weaker for neuroticism and stronger for conscientiousness and agreeableness than if the source of the cyber incivility was a co-worker.

Assuming cyber incivility targets who experience incivility from their supervisors will be less likely to engage in CWB-Ps, it is unclear whether they will have the same or more of an inclination to engage in CWB-Os. In other words, it is unclear how the source of the cyber incivility might influence targets’ engagement in CWB-Os. Therefore, in the present study I propose the following research questions:

**Research Question 2:** Does the source of the cyber incivility moderate the relation between perceptions of cyber incivility and engagement in CWB-Os, such that targets are more or less likely to engage in CWB-Os when their perceived cyber incivility comes from a supervisor as opposed to a co-worker?
Research Question 3: Does the source of the cyber incivility moderate the indirect effect of personality on engagement in CWB-Os through perceptions of cyber incivility, such that targets are more or less likely to engage in CWB-Os when their perceived cyber incivility comes from a supervisor as opposed to a co-worker?

These antecedent and moderating variables may help researchers better understand the influence that incivility may have on negative work outcomes, as well as what dispositions may be associated with such experiences and negative outcomes. The final purpose of this research is to explore whether there are ways to mitigate these negative outcomes. Said differently, I will explore an additional moderating variable, job crafting, which could affect the extent to which targets of cyber incivility engage in CWBs.

Job Crafting

Although a form of job redesign, job crafting includes employee participation in the job redesign process. Researchers originally defined job crafting as a process in which employees actively make changes to the physical, cognitive, and relational characteristics of their work (Wrzesniewski & Dutton, 2001). These researchers asserted that job crafting came in three forms. First, employees may job craft by changing their task boundaries or modifying the actual type or scope of their job tasks. Second, employees may adjust their relational boundaries such that they change the type or amount of interpersonal exchanges they have with others at work. Lastly, job crafters may revise their cognitive task boundaries by changing their own perceptions of their work and the way they go about doing it (Wrzesniewski & Dutton, 2001). Although this provided an initial conceptualization of what job crafting might entail, researchers have since challenged this framework and argued that it is too general and too limited in its scope. In other words, researchers have argued that this definition does not address the actual behaviors of
employees in the job crafting process, and that there are even more forms that job crafting may take that fall outside of this definition. (Bakker, Tims, & Derks, 2012; Tims & Bakker, 2010). Thus, framed within the job demands-resources (JD-R) model, Tims and Bakker (2010) revised the forms or dimensions of job crafting.

The JD-R model asserts that job demands and job resources make up the two broad categories of job characteristics that apply to all jobs, regardless of the specific job demands and resources that might be involved in any particular job. Job demands are aspects of a job that involve the exertion of ongoing physical or psychological effort such that there are physiological or psychological costs as a result. In contrast, job resources are aspects of a job that reduce the aforementioned job demands and their resulting costs or that facilitate the achievement of work goals, personal growth, learning, or development (Bakker & Demerouti, 2007).

Based on this model, Tims, Bakker, and Derks (2012) extracted four distinct dimensions of job crafting: increasing structural job resources, increasing social job resources, decreasing hindering job demands, and increasing challenging job demands. These dimensions refer to actions that employees can take to manipulate the job demands and resources in their jobs. For example, increasing structural job resources might refer to employees finding opportunity for self-development or increasing their level of autonomy in their work. In contrast, increasing social job resources refers to seeking resources like social support, feedback, or coaching from a supervisor (Tims et al., 2012). On the job demands side, hindering demands are job demands that are overwhelming to employees and that impede the achievement of desired goals. These demands might include role ambiguity and conflict, interpersonal conflict, and any other demands that employees find to be mentally and emotionally taxing (Tims & Bakker, 2010; Tims et al., 2012). When employees lack the job resources to cope with and manage these
hindering job demands, such demands can result in negative personal and organizational outcomes (Bakker, Demerouti, & Euwema, 2005; Crawford, LePine, & Rich, 2010). Thus, employees may engage in job crafting to reduce these hindering demands or they may increase resources to combat these demands. In comparison to hindering job demands, challenging job demands are demands that are less taxing on employees and their job resources because the cost of challenging demands are offset by potential opportunities for growth, stimulation, mastery, and learning (Tims & Bakker, 2010; Tims et al., 2012). In fact, having too few challenging demands and a lack of stimulating work may actually result in several negative work outcomes among employees like absenteeism and job dissatisfaction (Kass, Vodanovich, & Callender, 2001). Therefore, when individuals have adequate job resources, they may job craft to take on more responsibility, increase their workloads, and expand the scope of their job to increase these challenging demands in their work (Tims & Bakker, 2010; Tims et al., 2012).

Because the integration of job crafting into the relation between cyber incivility and CWBs is exploratory in nature, this study will follow a similar theoretical rationale that Park et al., (2015) used to explain the relation between these variables. First, the present study will draw from both the stressor-strain framework and the JD-R model itself. Within these theories, researchers would classify incivility as a stressor, a form of interpersonal conflict, and a hindering job demand. As a result, this stressor could be associated with a number of negative outcomes, including behavioral strains such as CWBs (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Penney & Spector, 2005). Thus, theoretically employees who experience a hindering job demand (i.e., cyber incivility) could craft their jobs in a number of ways to counteract the negative impact of such a demand. Namely, individuals could attempt to increase their structural or social job resources in order to better cope with the cyber incivility. Although
there is no extant research that has demonstrated how job crafting itself could mitigate the negative impact of incivility, there is research that has shown how employees might craft their jobs to address elements that could buffer the negative effects of hindering job demands like incivility. For example, researchers found that a social resource, social support at work, buffered the relation between incivility and multiple psychological strains (Miner, Settles, Pratt-Hyatt, & Brady 2012). Furthermore, Park et al., (2015) demonstrated a similar moderating effect that job control, a structural job resource, had on the association between cyber incivility and psychological and physiological strains. Thus, although this research does not involve a proactive effort from employees to attain more job resources (i.e., job crafting), it does show how having social and structural job resources (i.e., social support and job control) can mitigate the negative impacts of incivility. Accordingly, the present study pertains to the following hypotheses:

**Hypothesis 4:** Crafting a job to increase (a) social and (b) structural job resources will moderate the relation between perceptions of cyber incivility and engagement in CWBs (including incivility) such that the positive relation between perceptions of cyber incivility and the engagement in CWBs (including incivility) will be weaker when crafting a job to increase resources is high vs. low.

**Hypothesis 5:** Crafting a job to increase (a) social and (b) structural job resources will moderate the indirect effect between personality and engagement in CWBs (including incivility) through perceptions of cyber incivility such that the mediated effect between personality and the engagement in CWBs (including incivility) will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to increase resources is high vs. low.
Along the same lines, the effort-recovery model (ERM; Meijman & Mulder, 1998) and the conservation of resources (COR) theory (Hobfoll, 1989), albeit more general approaches, can further emphasize the importance of job resources and introduce the role that crafting a job to address job demands may play.

Similar to the JD-R, both the ERM and COR theory are centered on the notion that job demands or stressors have a taxing effect on individuals and their resources. As the ERM specifies, these demands result in load reactions, or negative responses that can manifest themselves in physiological, psychological, or behavioral ways. Thus, to stabilize these responses, individuals must remove their demands and undergo a recovery period to recharge their resources in preparation for new demands (Meijman & Mulder, 1998). Although much of the ERM research has focused on psychological detachment from these job stressors during periods outside of work (e.g., Sonnentag & Fritz, 2015), an alternative recovery process may be for individuals to rearrange elements of their work to reduce their hindering demands that are especially taxing upon their resources. In theory, this could aid with the recovery process and prevent negative reactions to the demands such as incivility and CWBs. Thus the present study hypothesizes:

_Hypothesis 6:_ Crafting a job to decrease hindering job demands will moderate the relation between perceptions of cyber incivility and engagement in CWBs (including incivility), such that the positive relation between perceptions of cyber incivility and the engagement in CWBs (including incivility) will be weaker when crafting a job to decrease hindering job demands is high vs. low.

_Hypothesis 7:_ Crafting a job to decrease hindering job demands will moderate the indirect effect between personality and engagement in CWBs (including incivility)
through perceptions of cyber incivility such that the mediated effect between personality and the engagement in CWBs (including incivility) will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to decrease hindering job demands is high vs. low.

In contrast to the ERM, the main principle of the COR theory is that individuals are predisposed to attain and protect resources that threatening stressors use and deplete (Hobfoll, 1989). Said differently, rather than reducing demands to recover, the COR theory states that individuals are always attempting to hold and build on their resources because threatening stressors may use up these resources. Thus, as in the JD-R model, individuals need resources to be able to manage their demands and crafting their jobs to acquire more social and structural job resources may be a process in which they do this. However, COR theory has a broader definition of job resources than the JD-R model, and also includes a process in which individuals may be willing to spend their resources for more highly valued resources. Of relevance to the present study are resources such as self-esteem, mastery, and skills. Specifically, individuals may be willing to devote some of their other resources, like time and energy, to acquire these more highly valued resources because these growth-oriented resources are able to mitigate the effects of future threatening stressors, and thus can prevent future resource loss (Hobfoll, 1989). Challenging job demands are associated with mastery, the development of new skills, and corresponding increases in self-efficacy. Thus, by crafting jobs to increase these types of demands, individuals may experience improvements in work attitudes like motivation, engagement, and satisfaction (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Crawford, et al., 2010; LePine, Podsakoff, & LePine, 2005) that would be inconsistent with engaging in CWBs (e.g., Sulea et al., 2012). One study has demonstrated such an effect. Zhang, Mayer, and
Hwang (2018) found that when employees engaged in mastery experiences in which they could learn something new, these experiences mitigated the positive association between hindrance demands and workplace deviance. Taken together, increasing challenging job demands may better equip employees to cope with threatening stressors (e.g., cyber incivility) and thus reduce the likelihood that they will engage in CWBs. Thus, I hypothesize the following:

_Hypothesis 8:_ Crafting a job to increase challenging demands will moderate the relation between perceptions of cyber incivility and engagement in CWBs (including incivility), such that the positive relation between perceptions of cyber incivility and the engagement in CWBs (including incivility) will be weaker when crafting a job to increase challenging job demands is high vs. low.

_Hypothesis 9:_ Crafting a job to increase challenging demands will moderate the indirect effect between personality and engagement in CWBs (including incivility) through perceptions of cyber incivility such that the mediated effect between personality and the engagement in CWBs (including incivility) will be weaker for neuroticism and stronger for conscientiousness and agreeableness when crafting a job to increase challenging job demands is high vs. low.

**Methods**

**Participants and Procedure**

In the present study I expect to collect data from 500-750 employees from various working fields. In order to qualify for the study, participants must be at least 18 years of age and be full-time employees (working at least 35 hours per week). Additionally, participants must use electronic communication (e.g., email, texting, online chat) to communicate with their supervisor and/or co-workers at least once per week in order to be included in the study. Participants will
be recruited through Amazon Mechanical Turk (MTurk) and participants will receive a small monetary incentive for their participation in the study. Researchers have demonstrated that MTurk samples yield data that is comparable in quality to traditional samples (Buhrmester, Kwang, & Gosling, 2011) and that MTurk participants may even be more attentive survey participants than those in traditional samples (Hauser & Schwarz, 2015).

**Measures**

**Personality.** To measure personality (i.e., conscientiousness, agreeableness, and neuroticism, and openness) I will use 16 of the 20 items from the Mini-IPIP scales (Donnellan, Oswald, Baird, & Lucas, 2006). The Mini-IPIP scales are based on the larger 50-item International Personality Item Pool (IPIP) representation of the Big-Five lexical markers (Goldberg, 1992). For each personality factor, there are four indicator items. A sample conscientiousness item is, “I get chores done right away.” An example of an agreeableness item is, “I sympathize with others’ feelings.” A sample item from the neuroticism measure is, “I have frequent mood swings.” Finally, an example of an openness item is, “I have a vivid imagination.” Participants will report how accurately each statement describes their general self on a 5-point scale (1 = “Very inaccurate,” 5 = “Very accurate”). Appendix A includes the full list of items from the four 4-item scales.

**Perceptions of cyber incivility and cyber incivility source.** I will assess the source from which participants experience the most cyber incivility, as well as the frequency with which they experience uncivil cyber behaviors.

**Cyber incivility source.** To assess the source of the perceived incivility, prior to the administration of the cyber incivility measure (Lim & Teo, 2009) I will present a list of the
behaviors from that measure for participants to review. Then, I will ask participants to report
who they experience these types of behaviors from most, their supervisors or their co-workers.

**Perceptions of cyber incivility.** After completing the single cyber incivility source item, I
will then ask participants to complete the cyber incivility measure thinking only about the
behaviors of either their supervisors or co-workers, depending on their response to the source
item. To measure perceptions of cyber incivility, I will use Lim and Teo (2009)'s 14-item cyber
incivility measure. Participants will report the frequency they have experienced various uncivil
cyber behaviors (from their reported source) during the past year on a 5-point scale (1 = “Not at
all,” 5 = “All the time”). Sample items include, “Said something hurtful to you through email”
and “Ignored a request (e.g., schedule a meeting) that you made through email.” Appendix B
displays the full cyber incivility measure.

**Engagement in counterproductive work behaviors (including incivility).** I will
measure the extent to which employees engage in CWBs and incivility with three separate
instruments.

**Face-to-face workplace incivility.** To measure face-to-face incivility, I will use the
Workplace Incivility Scale (WIS; Cortina et al., 2001). The WIS is a list of 7 uncivil behaviors.
Although Cortina and colleagues (2001) originally used the WIS to measure experienced
incivility, Blau and Andersson (2005) demonstrated that simply reversing the perspective
through the lead-in phrase can result in a measure of engagement in incivility that is distinct from
the measure of experienced incivility. Thus, I will use the lead-in phrase, “How often have you
exhibited the following behaviors in the past year to someone at work” with the WIS to measure
engagement in face-to-face incivility. Respondents will respond on a 5-point scale (1 = “Never,”
5 = “Many times”). Sample items include, “Put someone down or was condescending to them”
and “Paid little attention to someone’s statement or showed little interest in their opinion.”

Appendix C displays the full list of items from the WIS.

**Cyber workplace incivility.** I will measure engagement in cyber incivility with the same 14-item measure that I will use to measure perceptions of cyber incivility that is mentioned above (Lim & Teo, 2009). However, I will change the introduction statement of the measure from “Please rate the extent to which you have experienced each of these behaviors during the past year…” to “Please rate the extent to which you have engaged in each of these behaviors at work during the past year.” Researchers have used similar methods of reversing the lead-in statement to create distinct measures (Blau & Andersson, 2005). Participants will still respond on a 5-point frequency scale (1 = “Not at all,” 5 = “All the time”).

**Counterproductive work behaviors.** To measure CWBs, I will use the Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2005). The CWB-C is a 33-item measure that is divided into five dimensions: Sabotage (e.g., “Purposely wasted your employer’s materials/supplies”), withdrawal (e.g., “Came to work late without permission”), production deviance (e.g., “Purposely did your work incorrectly”), theft (e.g., “Stolen something belonging to your employer”), and abuse (e.g., “Started or continued a damaging or harmful rumor at work”). Sabotage, withdrawal, production deviance, and theft are also forms of CWB-O, whereas most of the abuse items are forms of CWB-P. However, due to the overlap in item content domain between the abuse dimension of the CWB-C and the incivility instruments, I modified the abuse dimension to only include severe or aggressive forms of abuse. Accordingly, I will refer to the abuse domain as aggression henceforth. An example item from the aggression domain is, “Threatened someone at work with violence.” In summary, the modified CWB-C measure will consist of 6 CWB-P items and 14 CWB-O items. Participants will indicate the
extent to which they have engaged in each of the 20 behaviors during the past year on a 5-point scale (1 = “Never,” 5 = “Every day”). Appendix D shows the full CWB-C that I will use in the present study.

**Job crafting.** To measure the four dimensions of job crafting, I will use the job crafting scale (JCS; Tims, et al., 2012). The JCS consists of 21 items in total, with five items loading onto each of the four job crafting facets except for the decreasing hindering job demands facet, which has 6 items loading onto it. Participants will respond to each of the questions on a 5-point frequency scale (1 = “Never,” 5 = “Very often”). “I try to develop my capabilities” is a sample item from the increasing structural job resources facet. A sample item from the increasing social job resources facet includes, “I ask my supervisor to coach me.” One item from the increasing challenging job demands facet is, “When an interesting project comes along, I offer myself proactively as a project co-worker.” Finally, an example of an item from the decreasing hindering job demands facet is, “I make sure that my work is mentally less intense.” Appendix E displays the full JCS.

**Demographic and control variables.** I will ask participants to report on some demographic variables such as age and job sector. Based on previous research, I will also measure and control for some additional variables. Appendix F shows the full list of demographic and control variables and their respective response options.

**Gender.** Research has shown that females may report higher frequencies of experienced incivility (Cortina et al., 2001). Thus, I will measure and control for participants’ gender.

**Hours worked per week.** Because working more hours per week may increase the opportunity to experience cyber incivility and engage in CWBs, I will control for the number of hours that participants work per week.
**Job tenure.** Research has shown that job tenure may be associated with the engagement in CWBs (Berry et al., 2007). Thus, I will measure and control for the number of years that participants have worked for their current employers.

**Proposed Analyses**

After calculating means, standard deviations, and correlations among all study variables, I will conduct a confirmatory factor analysis (CFA) to test the fit of the proposed measurement model. I will compare the measurement model to a one-factor model in which all indicator items will load onto a single latent factor. Adequate fit of the measurement model and superior fit of the measurement model compared to the one-factor model will indicate that the latent variables in the study are distinct from one another.

Next, I will test the hypotheses using structural equation modeling (SEM) in R studio. Specifically, I will first test the fit of the hypothesized structural model. Assuming adequate fit of the model, I will then assess the path coefficients between variables. However, due to the complexity of the model as a whole, it may be necessary to test certain parts of the model separately. Because the simultaneous moderation of each of the specified paths with each of the specified moderators is not of particular interest in the present study, if necessary, I will begin breaking the model down by each individual moderator. To test the statistical significance of the specified indirect effects I will use bootstrapping to produce bias-corrected confidence intervals. I will first assess the hypothesized indirect effects and then the conditional effects of the hypothesized moderating variables. In order to interpret the conditional effects of job crafting, for each job crafting dimension I will probe the moderation by creating low, moderate, and high levels based on the mean and standard deviation of each respective job crafting dimension interaction. These levels will indicate the direction of the moderation effect.
References


Besser, A., & Shackelford, T. K. (2007). Mediation of the effects of the big five personality dimensions on negative mood and confirmed affective expectations by perceived


Appendix A

Mini-IPIP (Donnellan et al., 2006) from the IPIP representation of the Big-Five Lexical Markers (Goldberg, 1992).

5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree)

Please indicate the extent to which you agree to the following statements.

Conscientiousness

5. I get chores done right away.
6. I like order.
7. I often forget to put things back in their proper place (-).
8. I make a mess of things (-).

Agreeableness

5. I sympathize with others’ feelings.
6. I feel others’ emotions.
7. I am not really interested in others (-).
8. I am not interested in other people’s problems (-).

Neuroticism

5. I am relaxed most of the time (-).
6. I seldom feel blue (-).
7. I get upset easily.
8. I have frequent mood swings

Openness to Experiences

5. I have a vivid imagination.
6. I have difficulty understanding abstract ideas (-).
7. I am not interested in abstract ideas (-).
8. I do not have a good imagination (-).
Appendix B

Cyber Incivility Source

Looking at the following list of behaviors, from who do you tend to experience these types of behaviors from most, your supervisor(s) or co-worker(s)?

- Supervisor(s)
- Co-worker(s)

15. Said something hurtful to you through email.
16. Used emails to say negative things about you that he/she would not say to you face-to-face.
17. Made demeaning or derogatory remarks about you through email.
18. Inserted sarcastic or mean comments between paragraphs in emails.
19. Put you down or was condescending to you in some way through email.
20. Sent you emails using a rude and discourteous tone.
21. Use CAPS to shout at you through email.
22. Not replying to your email at all.
23. Ignored a request (e.g., schedule a meeting) that you made through email.
24. Replied to your emails but did not answers your queries.
25. Used emails for time-sensitive messages (e.g., canceling or scheduling a meeting on short notice).
26. Paid little attention to a statement made by you through email or showed little interest in your opinion.
27. Not acknowledging that he/she has received your email even when you sent a “request receipt” function.
28. Used email for discussions that would require face-to-face dialogue.

Cyber Incivility Measure (Lim & Teo, 2009)

5-point scale ranging from 1 (Not at all) to 5 (All the time).

Please indicate the extent to which you have experienced each of the following behaviors from your (supervisor(s) or co-worker(s) depending on their response to the previous question) during the past year.

15. Said something hurtful to you through email.
16. Used emails to say negative things about you that he/she would not say to you face-to-face.
17. Made demeaning or derogatory remarks about you through email.
18. Inserted sarcastic or mean comments between paragraphs in emails.
19. Put you down or was condescending to you in some way through email.
20. Sent you emails using a rude and discourteous tone.
21. Use CAPS to shout at you through email.
22. Not replying to your email at all.
23. Ignored a request (e.g., schedule a meeting) that you made through email.
24. Replied to your emails but did not answers your queries.
25. Used emails for time-sensitive messages (e.g., canceling or scheduling a meeting on short notice).
26. Paid little attention to a statement made by you through email or showed little interest in your opinion.
27. Not acknowledging that he/she has received your email even when you sent a “request receipt” function.
28. Used email for discussions that would require face-to-face dialogue.
Appendix C

Face-to-Face Workplace Incivility Scale (WIS; Cortina et al., 2001).

5-point scale ranging from 1 (Never) to 5 (Many times).

How often have you exhibited the following behaviors in the past year to someone at work?

8. Put down others or was condescending to them in some way.
9. Paid little attention to a statement made by someone or showed little interest in their opinion.
10. Made demeaning, rude, or derogatory remarks about someone.
11. Addressed someone in unprofessional terms either privately or publicly.
12. Ignored or excluded someone from professional camaraderie (e.g. social conversation).
13. Doubted someone’s judgement in a matter over which they have responsibility.
14. Made unwanted attempts to draw someone into a discussion of personal matters.
Appendix D

Counterproductive Work Behavior Checklist (CWB-C; Spector et al., 2005)

5-point scale ranging from 1 (Never) to 5 (Every day)

Please indicate the extent to which you have engaged in the following behaviors during the past year.

**CWB-O**

16. Purposely wasted your employer’s materials/supplies.
17. Purposely damaged a piece of equipment or property.
18. Purposely dirtied or littered your place of work.
19. Came to work late without permission.
20. Stayed home from work and said you were sick when you weren’t.
21. Take a longer break than you were allowed to take.
22. Left work earlier than you were allowed to.
23. Purposely did your work incorrectly.
24. Purposely worked slowly when things needed to get done.
25. Purposely failed to follow instructions.
26. Stolen something belonging to your employer.
27. Took supplies or tools home without permission.
28. Put in to be paid for more hours than you worked.
29. Took money from your employer without permission.

**CWB-P**

16. Verbally abused someone at work
17. Made an obscene gesture (the finger) to someone at work.
18. Threatened someone at work with violence.
19. Threatened someone at work, but not physically.
20. Said something obscene to someone at work to make them feel bad.
21. Hit or pushed someone at work.
Appendix E

Job Crafting Scale (JCS; Tims et al., 2012)

5-point scale ranging from 1 (Never) to 5 (Very often)

Please rate the extent to which you engage in the following behaviors in your current place of employment.

**Increasing Structural Job Resources**

6. I try to develop my capabilities.
7. I try to develop myself professionally.
8. I try to learn new things at work.
9. I make sure that I use my capacities to the fullest.
10. I decide on my own how I do things.

**Increasing Social Job Resources**

6. I ask my supervisor to coach me.
7. I ask whether my supervisor is satisfied with my work.
8. I look to my supervisor for inspiration.
9. I ask others for feedback on my job performance.
10. I ask colleagues for advice.

**Increasing Challenging Job Demands**

6. When an interesting project comes along, I offer myself proactively as project co-worker.
7. If there are new developments, I am one of the first to learn about them and try them out.
8. When there is not much to do at work, I see it as a chance to start new projects.
9. I regularly take on extra tasks even though I do not receive extra salary for them.
10. I try to make my work more challenging by examining the underlying relationships between aspects of my job.

**Decreasing Hindering Job Demands**

7. I make sure that my work is mentally less intense.
8. I try to ensure that my work is emotionally less intense.
9. I manage my work so that I try to minimize contact with people whose problems affect me emotionally.
10. I organize my work so as to minimize contact with people whose expectations are unrealistic.
11. I try to ensure that I do not have to make many difficult decisions at work.
12. I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once.
Appendix F

Demographic and Control Variables

8. What is your age in years?

9. Which best describes your current employment situation?
   • Full-time (at least 35 hours per week)
   • Part time (less than 35 hours per week)
   • Homemaker

10. How often do you use electronic communication (e.g., email, texting, online chat) to communicate with your supervisor(s) and/or co-workers for work?
    • Several times per work day
    • At least once per work day
    • Less than once per work day
    • At least once per week
    • Less than once per week

11. What is your gender?
    • Male
    • Female

12. Of the industries listed below, which one would you say your current job belongs to?
    • Business and Financial Operations
    • Computer and Mathematical
    • Architecture and Engineering
    • Life, Physical, and Social Science
    • Community and Social Service
    • Legal
    • Education, Training, and Library
    • Arts, Design, Entertainment, Sports, and Media
    • Healthcare Practitioners and Technical
    • Healthcare Support
    • Protective Service
    • Food Preparation and Serving Related Occupations
    • Building and Grounds Cleaning and Maintenance
    • Personal Care and Service
    • Sales and Related Occupations
    • Office and Administrative Support
    • Farming, Fishing, and Forestry
    • Construction and Extraction
    • Installation, Maintenance, and Repair
    • Production
    • Transportation and Material Moving
• Military Specific Occupations
• Other (Please Specify)

13. How long have you been employed at your current job (in years and months)?
   • Years_______
   • Months_______

In an average working week, how many hours do you typically work?
Figure 3. Hypothesized moderated mediation model.